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# THE UNIVERSITY OF MISSOURI BULLETIN

~~EXTENSION SERIES~~

VOLUME 1 NUMBER 1

A NEW DEPARTURE  
FOR  
UNIVERSITY EXTENSION



UNIVERSITY OF MISSOURI  
COLUMBIA, MISSOURI  
April, 1913

# A NEW DEPARTURE FOR UNIVERSITY EXTENSION

The University of Missouri through the United States mail gives you chance to work for high school credit if you are unable to attend a high school.

These courses are prepared and given by members of the University Faculty. The instruction in each case represents a definite amount of work with credit equivalent to that of corresponding courses given in accredited schools.

**Who May Enroll.**—Any one may enroll who has completed the first eight grades, or their equivalent, of the common school course. However, students enrolled in a high school are not permitted to take these courses during the regular session. Neither are they permitted to take them during summer vacation without the consent of their superintendent.

**Purpose in Offering These Courses.**—To enable teachers and those desiring to teach, without leaving their homes and while engaged in other work, to comply with those provisions of the school law which require as a prerequisite for first and second grade county certificates after 1912, 1914, 1916, and 1918, one year, two years, three years, and four years respectively, of high school work or its equivalent.

To give teachers who are working for state certificates while engaged in teaching or other work an opportunity to prepare for examinations.

(If courses not here announced are desired write for  
"Announcement of Extension Division, 1912-13.")

To help persons who are desirous of entering the University, but are ~~unable to meet the entrance requirements, to complete such requirements~~

To provide a high grade of instruction for other persons who find it convenient to attend school.

## PROCEDURE

Ref.

After making up your mind to investigate this opportunity, write the Secretary of University Extension for application blank. Fill out the blank fully with the information called for and return it. If your application is approved you will be notified and instructed to remit the required fee to the Secretary of the University.

You will then be enrolled and the member of the faculty who is to have charge of your course will send you the first lesson with instructions for study, methods of preparation, and directions for returning lesson sheets and reports. Thus, assignment by assignment, the teacher will send you the lesson sheets which after you have made your preparation, should be mailed to the teacher who will return them with such explanations, corrections, and suggestions as he deems necessary. Questions, assignments for reading, and lists of books will be furnished throughout the course so that each student will have adequate guidance and assistance. Questions pertaining to the subject under study are at all times encouraged.

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#### Cost by Correspondence:

One-half unit course.....	\$ 7.50
One unit course.....	15.00
Two unit course.....	30.00

**Time of Preparation.**—Each unit consists of about forty assignments with a minimum time of preparation of from 4 to 6 hours each. Students are expected to pursue their studies as rapidly as is consistent with good work.

### COURSES OFFERED

(The references within parenthesis ( ) after the course titles that follow are to pages of the University of Missouri Catalogue, 1911-12. Write for a copy of the catalogue if you have not already received one.

Grammar (p. 59) one unit.

Composition (p. 59) one unit.

Literature (p. 59-60) one unit.

~~Literature and the History of English Literature (p. 59-60) two units.~~

(not more than four units may be offered in English)

Elementary Algebra (p. 60) one unit.

Complete Elements of Algebra (p. 60) one and one-half units.

Plane Geometry (p. 60) one unit.

Solid Geometry (p. 61) one-half unit.

Trigonometry (p. 61) one-half unit.

Ancient History (p. 61) one unit.



Mediaeval and Modern History (p. 61) one unit.

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Beginner's Latin (p. 62) one unit.

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### GENERAL INFORMATION

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The maximum amount of work that may be done by correspondence is limited to two and one-half units for any one calendar year.

Correspondence work may be begun any time during the year.

For admission to correspondence courses no preliminary examination is required.

During an instructor's vacation a substitute will be provided to carry on his course if possible.

No fee is refunded because of a student's inability to pursue a course for which he has been enrolled.

The University of Missouri belongs to all of the people of the State, and is desirous of serving you. Now is your opportunity to make use of it. It is prepared through the extension division to go to you.

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All remittances should be made payable and sent to J. G. Babb, Secretary of the University, after proper notice by the Secretary of University Extension to remit.

For information regarding correspondence courses and applications write to

SAM'L D. GROMER,

Secretary of University Extension,

University of Missouri,

Columbia, Missouri

# THE UNIVERSITY OF MISSOURI BULLETIN

**EXTENSION SERIES**

VOLUME I

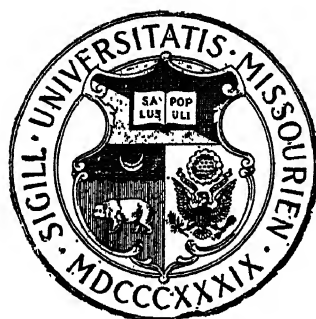
NUMBER 3

## CONSOLIDATION OF SCHOOLS IN MISSOURI

BY

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*Assistant Professor of Rural Education*



UNIVERSITY OF MISSOURI  
COLUMBIA, MISSOURI  
October, 1913

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# CONSOLIDATION OF SCHOOLS IN MISSOURI

## INTRODUCTION

In November, 1911, the University issued a bulletin on consolidation of rural schools. This second bulletin has been prepared to explain the new consolidation laws, to create sentiment in favor of the movement, and to suggest plans of procedure.

All literature on the subject has been examined and that which is applicable to Missouri has been used. Much material has been collected by correspondence with experts upon consolidation in several states.

The University of Missouri has established a Bureau of Consolidation to which letters upon any of the questions involved may be addressed. Plats and information about proposed plans may be sent to the Bureau if an opinion as to methods of procedure is desired. The University, the State Department of Education, the Normal Schools, and a number of county superintendents are all deeply interested in consolidation and will gladly give assistance whenever it is possible.

Address all communications with the University to the Bureau of Consolidation, University of Missouri, Columbia, Missouri.

## THE NATURE OF CONSOLIDATION

The most important educational problem in America is that of the rural schools. The last generation has witnessed great advancement along educational lines but it has been confined to city schools, normal schools and universities. Little progress has been made in the country schools. These institutions have not felt the influence of the forward movement that has characterized the last two decades. There are some good country schools in which earnest, capable men and women are doing excellent work but the great majority of them are not serving the community needs.

It is useless to talk about restoring the old-fashioned country school. The large enrollment which was due to the attendance of grown boys and girls is a thing of the past. The social interest and coherence that once made these schools a center of influence is no longer possible. In order to put new life into country schools and to restore them to their former usefulness, it is necessary to have larger school units. This is possible under consolidation, a plan which has commended itself to thinking people and has been tried in many states.

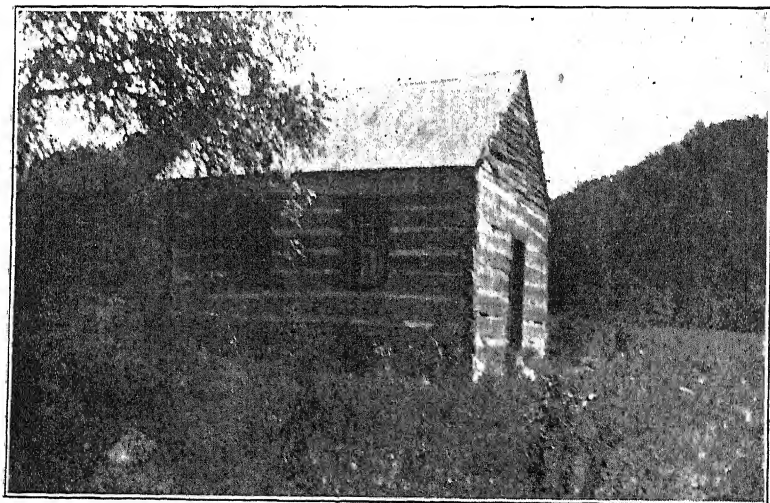
By consolidation is meant the combining of two or more districts or parts of districts, each having three directors, into one large district having six directors. It means the same business management applied in the rural schools that is applied in city schools. It means cooperation which is a principle that must be applied in the solution of the Rural Life Problem.

The American farmer is independent; his mode of life has made him such. His task has been to clear forests, erect homes and to undergo hardship. The distance between rural homes has developed a spirit of self-reliance. But while the environment of the farmer has developed some noble characteristics, he has failed to realize the great advantage of cooperation which has contributed so much to modern enterprises found in the cities.

The chief reason for the great development of the city as compared with the county is due to cooperation. The water plant, the lighting system, the paving and the sewerage could not be accomplished by one individual working alone. Yet it is not difficult when the municipality as a whole puts its hand to the task.

Consolidation means cooperation in rural school affairs. What is impossible for one district working alone, becomes an easy matter where three or four or five districts work together.

There is only one principle upon which to work for consolidation of schools. That is, improved service. Cheapness is no argu-



One of the log school houses still in use in Missouri. There is nothing in this environment that appeals to country children.

ment. The school which gives the people the best service for the money spent is the best school.

Farmers realize the importance of fertile soil, better barns and improved machinery but they have shown very little concern in the welfare of the rural school. They make liberal investments in land, stock and farm equipment and they will even borrow money for these things, while the school and those things that make for its efficiency are neglected. Poor buildings, poor equipment, poor arrangement and unsanitary conditions in the school are continued year after year. Country people need to realize that a poor school is very dear at any price. Only when the school is run at the highest rate of speed, only when every day counts for something in the life of its pupils is the institution doing work that is really worth while.

Country schools are maintained on very low taxes. The number of children enrolled in the city schools of Missouri is not as large as the number enrolled in the country schools, yet the city spends in buildings, equipment and teachers over four times as much for the education of its children as the country spends.

The average annual salary for teachers in country schools is \$302.01, while in cities it is \$624.83. The annual expenditure per child enrolled in the country school is \$10.38, while in the city school it is \$24.16. The average levy for school purposes in the country is 53.2 cents on the \$100.00 valuation, while in the city it is 98.6 cents. This shows that the cities are spending very much more money for the maintenance of their schools than the country is spending and this is the chief reason why the schools in the city have made so much more progress during the last twenty years than the country schools have made. People in the town want good schools and are willing to pay for them. The country child, however, is entitled to as good opportunity to secure an education as that afforded the city child.

A consolidated school in which a good high school is maintained will cost more than a one-room school, but it will give country children much better advantages—it will give them a "square deal."

It might be possible to run consolidated schools as cheaply as one-room schools but they would be poor and unsatisfactory. No community should boast of a cheap school; it should not be satisfied with anything but the best. The question should be, "How well has the money been spent?"

When the advantages of consolidated schools are once understood, more people will favor the plan. In many sections of the state the people will vote for better schools if the matter is brought forcibly to their attention and made clear. The friends of consolida-

tion should make the proposition plain and simple and the agitation should be for good schools and not for cheap schools.

### ADVANTAGES OF CONSOLIDATION

The friends of good schools often desire a statement of the advantages to be gained by consolidation. In this bulletin an attempt has been made to bring together results that have followed from actual cases of consolidation and thus to give practical suggestions to those interested in the proposition.

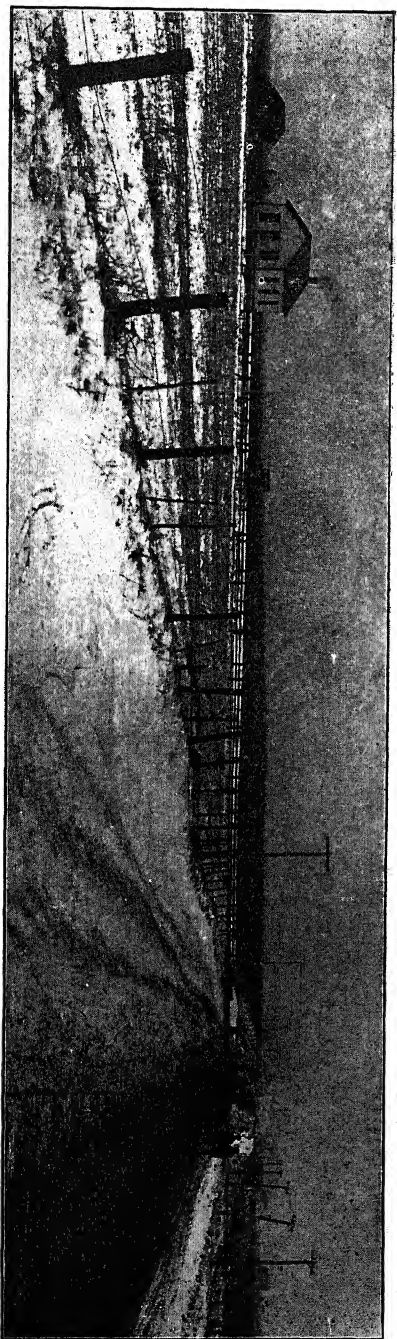
**I. It Educates the Child at Home.** Through consolidation country boys and girls are furnished a good education from the primary grades through the high school, without sending them away from home. Where the plan is adopted it is not necessary to send boys and girls who have completed the common school course to town and to board them in a strange home, in order to give them high school advantages; neither is it necessary to leave the farm and to move to town for this purpose.

Consolidation gives boys and girls in the rural districts equal advantages with children in cities and towns. It gives them the advantages of good graded schools and of a high school. They spend the day under the supervision of well trained teachers working with their neighbors and friends. At the close of the school day they return to their own homes where they assist in the chores and the evening is spent studying under parental care and oversight.

In consolidated districts where a high school is maintained, the course of study can be so arranged as to give a good course in agriculture, domestic science and manual training. This tends to keep boys and girls on the farm instead of encouraging them to leave it and to go to town. They are kept in touch with the open country where three-fourths of them will spend their lives. This is one of the best advantages of the plan. Under the present system only five per cent of country children are able to get the advantages of a high school by leaving home and going to the city. By consolidation these advantages would be brought to every boy and girl within the consolidated district.

**II. Health Is Improved.** The health of the pupils is better guarded when they are conveyed from their homes to the school in comfortable vehicles, warm and dry, than when they have to travel through mud and snow a mile or two and sit all day with wet feet and soggy clothing as they often do under present conditions.

Pupils are under the care of responsible persons from the time they leave home in the morning until they return at night. This tends to prevent difficulties on the way home such as loitering, quarrelling,



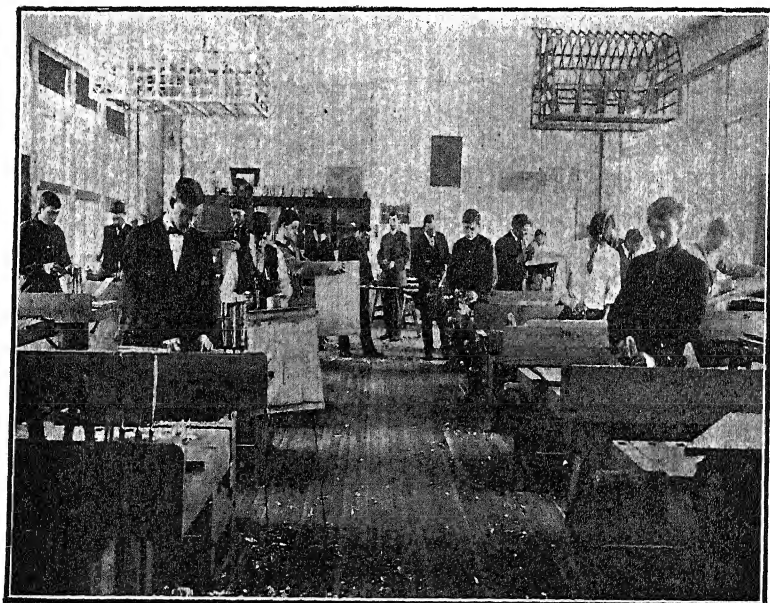
Thousands of country children travel over roads like this one when attending school. They not only wade through mud and water but are exposed to rain, snow and cold.



etc. Children are protected from those offences against decency and good morals so common on the road to and from school—conditions well understood by everyone who has given the matter serious consideration.

**III. The Economy of the Plan.** There are, on an average, three pupils every year finishing work in each country school. If four districts should combine this would make the number twelve. If it cost \$200.00 per year to pay the board, tuition, and other necessary expenses of each of these pupils to attend a high school in town (a moderate estimate), the total cost would amount to \$2400.00. A good teacher can be secured to give these pupils two years high school training for \$900.00 a year, which would make a net saving of \$1500.00. In case two teachers should be employed, it is safe to say that the amount spent by the district for high school training in city schools would pay the salary of the teachers and janitor service and there would be a good balance remaining.

Under this system the rich and the poor would have nearly equal advantages in securing a high school education. What is now the privilege of the few would become equally the opportunity of all. It gives an opportunity to the promising, ambitious boy or girl regard-



Manual training is provided in many rural high schools. This is one of the advantages of consolidation as it makes such work possible.

less of wealth; and in return the State is undoubtedly richer because of the citizenship of superior quality and efficiency.

The argument to be stressed, however, is not decreased expenses but improved service.

**IV. Social Advantages of Consolidation.** Consolidation tends toward a more healthy spirit in the school and in the community. The outdoor games, the debating clubs, literary societies, musical organizations and contests with other schools all tend to create a school spirit which is not possible under the present one-room system. Pride and public interest in the school are quickened and confidence and enthusiasm are inspired. These results are possible only when a large number of persons are brought together as consolidation brings them. The new law requires consolidated schools to have an auditorium which is used for literary societies, debating clubs, musical entertainments, lectures and farmers' institutes. This arrangement affords a common meeting place, a community center, not only for the consolidated district but for a much larger section.

These things are worth considering if country life is to be made permanent and satisfying. It is natural for young people to love society and to be interested in all social events. A community which gives attention only to hard, driving work, which makes no provision for good, wholesome recreation for the young people need not be surprised if it finds them drifting into the cities where the glare of electric lights and the glamour of pool halls and cheap theaters are in sharp contrast to the barren social life in many country communities.

**V. Better Attendance.** When children are conveyed to school, the problem of truancy and tardiness is practically solved. In a recent investigation made of 275 rural schools located in different sections of the state, it was estimated that the enrollment in the first and second grades, the first two years of school work, was 2071, while in the seventh and eighth grades, or the last two years of school work, it was 1175. This is a great waste. Country people would not think of permitting such a waste in their corn crop, their cattle or their hogs, yet they are contented to let these conditions continue in their schools. Consolidation improves attendance. In some instances it has been known to increase from fifty to nearly one hundred per cent.

**VI. Better Teaching.** In case the school is centralized and all the pupils are brought together and classified, the improved conditions cause greater enthusiasm on the part of teachers and greater interest in their work. They feel the effect of cooperation and professional contact which is a marked contrast to that of one teacher working alone with no companionship but that of children.

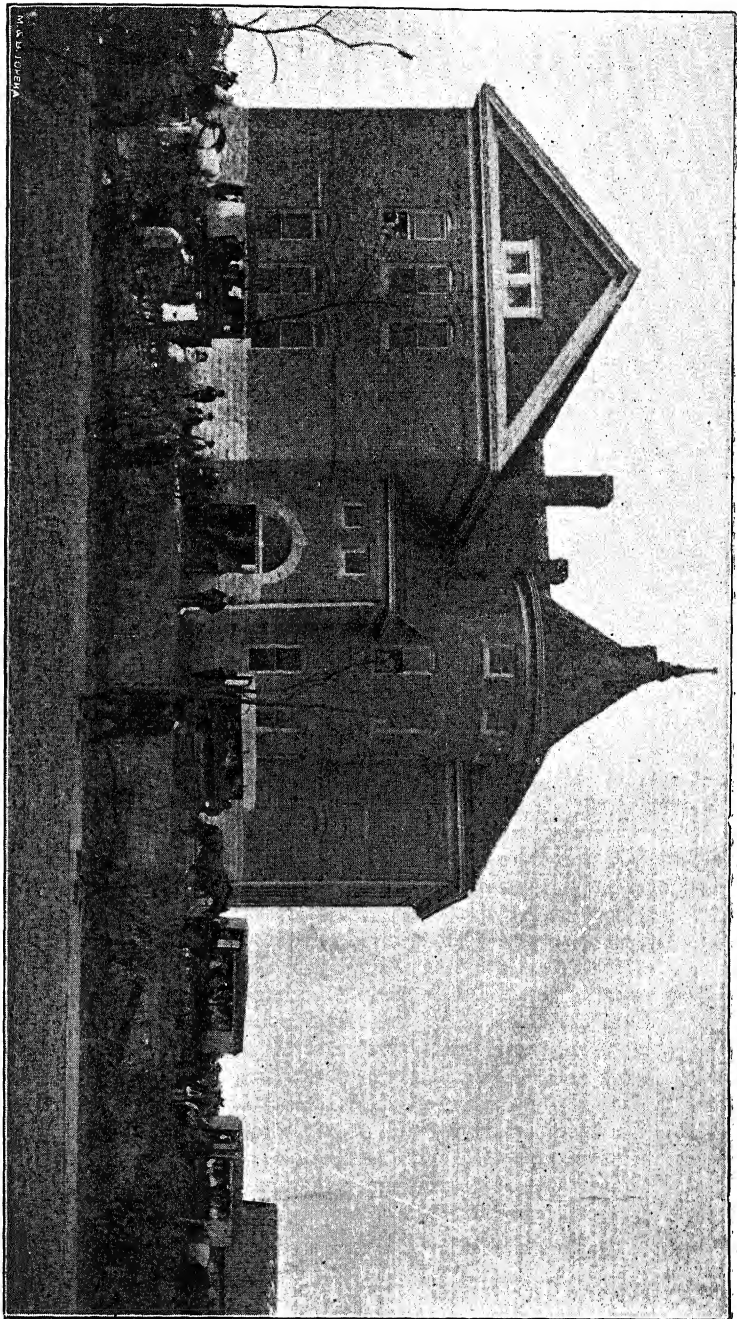
Under consolidation, the school is graded. The teacher has fewer daily recitations which affords more time for preparation and longer recitation periods.

If the grade work is continued in the original one-room buildings (the "ward schools"), there is still some system of organization and cooperation, and all of the "ward schools" will be attempting to do the same line of work in order to meet the requirements of the high school. The high school will influence each teacher and each school to do the best possible. It will increase attendance in the "ward schools" and will more than double the number of pupils completing the eighth grade and entering high school. It will be possible for the principal of the central high school to meet the teachers of the "ward schools" for the purpose of planning the work, arranging examinations and graduations, and considering other things of a professional nature.

Consolidation tends to lengthen the tenure of position. One of the evils of the rural school system of Missouri is the frequent change of teachers. It is seldom that a teacher remains in one school long enough to become thoroughly acquainted with conditions. The report of the State Superintendent of Public Schools for 1912 shows that there are 9868 teachers in the rural schools of Missouri, and of this number 6716 or over 68 per cent who are teaching their first year in their present position. Consolidated schools will attract teachers of training and experience and they will be retained longer in their positions.

**VII. Better Equipment.** Consolidation will bring about more commodious schoolhouses and better equipment. In a centralized school there can be many more accommodations because it will not be necessary to duplicate the apparatus for each separate school. This would insure a much better and larger equipment for the school as a whole. There would also be greater interest taken in the improvement of the grounds and the improvement and care of the building.

**VIII. Other Advantages.** The consolidated country school is the ideal place to get boys and girls interested in the school garden, in poultry management, dairying, domestic science, agriculture, and manual training. It makes the farm the ideal place in which to bring up children. It affords them the culture necessary for good citizenship; it affords the vocational training necessary to success in life; it broadens and brightens country life and brings about the closest cooperation between the school and the home.



A consolidated school in the open country. Transportation wagons waiting for pupils.

## OBJECTIONS TO CONSOLIDATION

A large number of objections to consolidation are made, especially by those who have never tried the plan. A careful investigation shows that where the plan has been tried the people are overwhelmingly in favor of it. Only in cases where there is some natural disadvantage as a large stream of water flowing through the district or some other considerable obstacle has there been any objection made that is worth while. Investigation shows that less than three per cent of the people in consolidated districts favor a return to the old system. Some of the objections are the following:

**I. Abandonment of Old Buildings.** One of the most frequently mentioned objections and one that often causes districts to hesitate to make a trial of consolidation, is the necessity of abandoning the old buildings and erecting a new one.

The answer to this objection is a plan that has been tried in many places. If the school buildings are too good to be abandoned, the people should vote upon consolidation with the understanding that the old buildings are to be used. Two or three of the best buildings could be moved to the place selected for the site of the consolidated school. One could be used for the elementary grades, one for the advanced grades and one for the high school work. It is better, however, to erect a modern building, where all grades can be taught.

**II. Increased Expense.** Many patrons oppose the plan on account of the increased expense. In the campaign for consolidation in Missouri there are really but two objections to meet; one is transportation, the other is the expense—the latter in fact includes the former.

The following statistics taken from reports of some of the counties in this State show the conditions of some of the rural schools and the advantages that would be gained by consolidation: Two schools have a daily attendance of 11 and 26 respectively; teachers' salaries \$30.00 and \$50.00 respectively. By consolidation one teacher could do the work of the two schools and there would be a saving of \$30.00 per month or \$240.00 for eight months. Four schools have a daily attendance of 22, 30, 10 and 13 respectively, total attendance, 75. Teachers' salaries \$50.00, \$75.00, \$55.00 and \$50.00, total \$230. Two teachers could do the work thus saving \$130.00 per month or \$1040.00 for eight months. Other examples might be given but these are enough to show that consolidation would not always increase the expense. If the children in the four schools mentioned should be provided with transportation, there would still be money saved. It should be remembered, however, that the greatest gain would be in the spirit, interest, and efficiency of the school work.

It is possible under consolidation to employ cheap teachers, to crowd the rooms, to run a poor high school or none at all and by this means show a considerable saving in the cost. While this plan would please a few, still it will not be adopted by the great majority of patrons in Missouri. Men may be indifferent and hard to arouse concerning the improvement of educational conditions for their children; still, very few will deliberately adopt a plan simply because it is cheap.

The chief characteristic of the consolidated school is its efficiency—its improved service; and improvement whether in pigs, cattle, crops, or schools means an expenditure of time and money.

A late report of the State Superintendent of Education shows that there are nearly eight thousand non-resident pupils in the high schools of this State. Putting the tuition of each pupil at \$3.00 per month and supposing that one-half of them board in town, it is a conservative estimate to place the tuition and board of these country students, for eight months, at \$650,000. If this money were spent in rural high schools, it would be sufficient to employ good, well-trained teachers, pay janitor bills, and other expenses; and then provide transportation for all pupils of the consolidated district. If rural high schools should be established throughout the State, it is altogether probable that the number of country students attending high schools would be doubled at once.

**III. Objection to Giving Up Local Organization.**—There are some who claim that if the local board is abolished and the affairs of the consolidated district are put into the hands of six men chosen as directors, that all kinds of calamities will follow. They say that there will be discrimination against the locality in which they live and that they will have no voice in the management of the consolidated school. There are two good answers. One is that where consolidation has been tried—in thirty-five states, and in some states for over twenty years—no complaint of this nature has ever been made.

The other answer is that consolidated rural school of Missouri would probably be composed of three, four, or five districts uniting, with an aggregate enumeration of 200 pupils. All cities have a board of directors which handles great problems, large expenditures, sometimes amounting to millions of dollars, and scores of ward schools and handles them with great efficiency.

For instance, Kansas City has 79 schools, 1043 teachers and 37,937 pupils. The board is composed of six members, one member for about 13 schools, 174 teachers and 6323 pupils. St. Louis has 114 schools, 2165 teachers and 88,002 pupils. The board is composed of 12 members, one member for about 9 schools, 180 teachers and 7333

pupils. If the boards of these two cities can look after the interests of this number of schools, teachers and pupils to the general satisfaction of all concerned, it does seem reasonable to suppose that a board of six intelligent farmers could take care of a consolidated district of three, four or five teachers and two hundred pupils, in a fair and impartial manner.

**IV. Dirt Roads.** Some argue that consolidation will not be possible in Missouri until the state has some system of macadamized roads. This argument can be answered in a few words. Iowa and Illinois have consolidated schools and are transporting the children over dirt roads. In the John Swaney School, Putnam County, Illinois, where the soil is as black and as deep as can be found, the school vehicles pass over dirt roads and yet there is no complaint made along this line.

The dirt roads of Missouri are bad enough and should be improved. There is no argument against that fact, but when milk, butter, coal, feed and the mail are delivered daily over these roads there seems no good reason why children could not be conveyed to school over them.

**V. Careless Drivers.** Many seem to think that careless drivers will be employed who will not attend to the comforts of the children. Where this plan has been tried it has been satisfactory. Drivers are required to sign a contract to start at a certain hour and to deliver the children at school on time. The driver is required to furnish a good safe team and a wagon fitted with seats and a good cover. He gives bond for the faithful performance of his duty.

**VI. Cost of Transportation.** The cost per pupil for transportation ranges from \$1.00 to \$3.00 per month. In some localities no transportation is provided by the public, but each family makes its own arrangement. It has been true in nearly every consolidated district where the schools have been centralizd, that the saving in teachers' salaries (a smaller number of teachers being needed) will nearly or quite meet the expense of transportation. In many cases, large boys who attend the high school are employed to drive the conveyance. As they desire to be in school and often would use a horse or team for their own convenience, they can be employed to do this work at very reasonable wages. No complaint has come from this arrangement where it has been tried.

**VII. Selfishness.** Some patrons who live in large, wealthy districts object to consolidation on the ground that their district would do more for the consolidated school than the small, weak districts. The same argument might be used by the large land owners and wealthy people of any district, yet no one would hardly propose that the poor man's child should stop school at the end of the third,

fourth, or fifth year because its father did not pay as much tax as some others. No, when it comes to education the American people as a rule are very democratic; they believe in giving every child an equal opportunity. Again, considering its ability to pay the levy the poor district might do much more in proportion to its valuation than the wealthy one. As this objection is founded upon selfishness pure and simple, it is necessary to get the one using it to see that as a citizen he owes some duty to his neighbors and to his country.

**VIII. Other Objections.** The assertion has been made that when children from different homes are conveyed in the same wagon, there will be great danger of spreading contagious diseases. Ohio has a large number of consolidated schools. The former State Superintendent of Public Schools speaking upon that subject says: "I can truthfully say that the experience of Ohio for the past fifteen years has shown that there is no valid ground for this objection." There is less danger in a wagon than in a poorly ventilated and overheated school room.

There are other objections made such as children will be away from home longer, they will be required to eat cold lunch, many teachers will be thrown out of employment, etc. These are not real objections but simply excuses made by those opposed to consolidation.

In concluding the objections, it is worth while to state again that the greatest objection is the increased expense. It should be borne in mind, however, that there can be no substantial improvement of schools or anything else without expenditure of money.

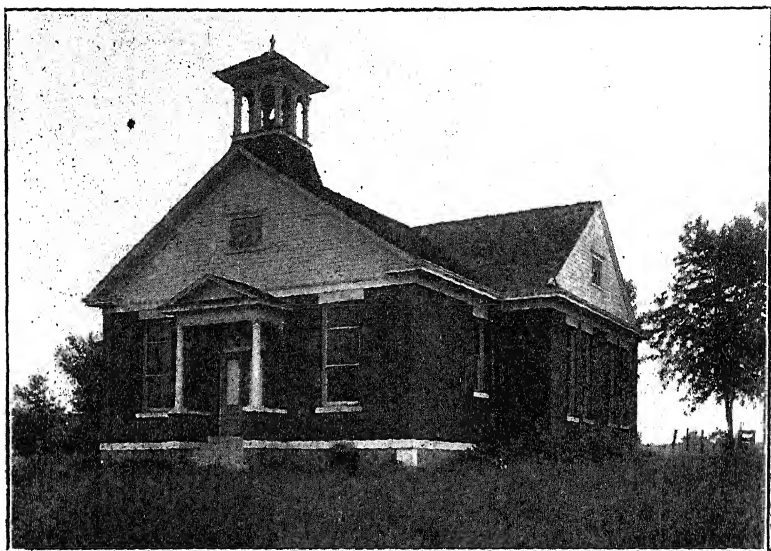
## CONSOLIDATION IN MISSOURI

Consolidation in Missouri began in 1902. Four districts united in organizing what is known as the Ruskin High School near Hickman Mills in Jackson County. The grade work is continued in the four original one-room buildings. The eighth grade work and four years of high school work are done in the central or high school building.

There are four teachers in the "ward schools"—one for each building—and three in the high school. The enumeration of the consolidated district is 243; the enrollment in the four "ward schools" is 172 and in the high school 40.

The salary of the principal of the high school is \$100.00 per month; of the two assistants \$65.00 each; of the "ward school" teachers \$50.00 each. The amount spent for school purposes the last year was \$4781.94, the levy being sixty cents on the one hundred dollar on the assessed valuation of \$625,000.





**Ruskin High School, Jackson County, Missouri, situated in the open country. Missouri needs one hundred schools of this type.**

There were eleven graduates from the common school course this year and six from the high school.

This school represents a type of rural consolidation where the high school is located in the open country and the grade work is done in the original buildings.

Elmer, Macon County, is a type of consolidation where a village is used as a center and all the work is done in a central building. No arrangement is made for transportation. The children come from the three original districts, some a distance of three miles, but no complaint is made and the people are pleased with the plan.

There are a number of schools in the State that have been formed by one or more districts or parts of districts voting to become a part of another district. Some of these are doing high school work, but they were not organized under the law providing for consolidation.

There is not a consolidated school in Missouri where all the grade and high school work is centralized in a building located in the open country. This is the next move in the educational advancement of the State.

### HOW TO CONSOLIDATE.

Before attempting any movement for consolidation, those interested in the matter should make a careful study of the two laws, one

providing for consolidation and the other for joint high schools and decide which plan they prefer. The important points of both laws are given on pages 18 and 19.

In case a community chooses to consolidate, the method of procedure is very simple, which is to secure a petition of twenty-five qualified voters in the community affected, stating that they desire to form a consolidated district; the petition should then be filed with the county superintendent of public schools. The county superintendent will then visit the community and in conference with the citizens affected, will proceed to lay out the consolidated district, make a plat of the same, post notices of election and call the meeting to order or depute someone to act in his place.

Before circulating a petition, it should be borne in mind that the proposed consolidated district must contain at least twelve square miles of territory, or, have at least an enumeration of two hundred children of school age. In making this estimate, the proposed consolidated district must not include within its territory any town or city which has by the last enumeration two hundred children of school age.

**Procedure.** After the notices are posted, it is time to arrange for public meetings. The aim of these meetings is to show the advantages of consolidation and to answer objections. It may be best first to hold a meeting of those who are in favor of the measure in order to decide upon a campaign. There should be a meeting in each district or part of district affected and a strong effort should be made to get as many as possible to attend. Men, women and children should be urged to be present. It often happens that boys and girls who are ready to enter a high school are the first to see the advantages of consolidation and not infrequently women become strong supporters of the measure before the men are aroused. Good speakers who are interested in consolidation should be secured for these meetings. A whirlwind campaign should be carried on.

By a little effort some public spirited citizen or citizens may be induced to donate a suitable site for the central building. Not less than five acres can, according to law, be considered for this purpose. Some generous gifts have been made to public schools in the way of campus, library and other equipment, and others will be made when the matter is properly presented.

There should be a strong organization for the purpose of pushing the campaign. There should be a local committee of three for each district or part of district affected to push the campaign. There should be an executive committee composed of some one from each comprised in the proposed consolidated district. The executive com-

mittee should meet often. There will be questions arising and important matters to be considered which the friends of the proposition should know. All facts should be made as clear as possible. Sometimes people vote against consolidation because the law and the facts have not been made clear.

The valuation of the proposed consolidated district, the number of teachers that will probably be needed, the length of the school term and the levy necessary for maintaining the school should all be considered; there should be no room for any misunderstanding on any of these points. There should be a mass meeting of all the districts or parts of districts affected just before the date for voting. This will give an opportunity to clear up anything that may not be understood and to answer all objections that may have been made.

### LAW ON CONSOLIDATION

Some important provisions of the law on consolidation are the following: A petition signed by twenty-five qualified voters of the community shall be filed with the county superintendent. It then becomes his duty to investigate the needs of the community and to determine the boundary lines of the proposed consolidated district. The district must contain at least twelve square miles of territory or have an enumeration of at least two hundred children of school age. No district shall be formed which shall include within its territory any town or city district enumerating two hundred children of school age.

The county superintendent shall call a special meeting of the qualified voters of the proposed consolidated district. He shall make the call by posting within the proposed district ten notices in public places, stating the time, place and purpose of meeting. The notice shall be given fifteen days before the date set for the meeting. The superintendent shall also post five plats of the proposed district fifteen days prior to the time of the meeting. These plats and notices shall be posted within thirty days after the filing of the petition. The superintendent shall file a copy of petition and of plat with the county clerk and shall send or take one plat to the special meeting. The meeting shall be called to order by the county superintendent of schools or some one deputed by him to call the meeting to order. The meeting shall then elect a chairman and secretary and proceed in accordance with section 10865, Revised Statutes, 1909. If a majority vote in favor of the proposition it is carried. The meeting should then proceed to elect six directors, two for three years, two for two years and two for one year. Directors must be elected by ballot, one at a time.

Transportation may be voted on at the special meeting, if notice of the same is given. It requires two-thirds of the votes cast on transportation to carry the proposition. If transportation is not provided it shall then be the duty of the board to maintain an elementary school within two and one-half miles by the nearest traveled road of the home of each child of school age within the school district.

If transportation is not provided, a consolidated district may decide by a majority vote at any annual or special meeting to have the seventh and eighth grade work done at the central high school building. This work may be discontinued at the central high school building by a majority vote taken at any annual or special meeting.

Whenever a consolidated district shall have secured a site of not less than five acres and shall have erected a building thereon suitable for a central school and containing one large assembly room and shall have installed a modern system of heating and ventilating, the State shall pay one-fourth of the cost of the building and equipment, provided the amount which the State pays does not exceed two thousand dollars (\$2000.00).

When a consolidated district has provided an adequate building, the State shall grant a special aid of twenty-five dollars (\$25.00) per year for each square mile, or fraction thereof, of territory included in the consolidated district provided the district maintains an improved high school of the third class and gives an approved course in agriculture for one year, but no district shall receive more than eight hundred dollars (\$800.00) under the provisions of this section.

The full text of the consolidation law of 1913 may be secured by writing the Honorable Wm. P. Evans, State Superintendent of Public Instruction, Jefferson City, Missouri.

### JOINT HIGH SCHOOL

Section 10852, p. 62, of the School Laws of Missouri provides for the establishment of Joint High Schools. The difference between this class of schools and consolidated schools should be clearly understood. The two are often confused; sometimes when a plan for consolidation is submitted, the misunderstanding due to the confusion of the two plans, contributes in a large measure to the defeat of the proposition.

The section referred to provides that when any district will furnish, heat, and keep in order a room or rooms for high school purposes, then any three or more districts may unite with it for the purpose of maintaining a joint high school. The section further provides that not over twenty per cent of the teachers' funds shall be set aside for this purpose. This law is not equitable; it places the

burden on one district to build, equip, and keep up a room or rooms to be used for high school purposes. Again, it requires the other districts which unite with it to set aside only one-fifth of the teachers' fund for the maintenance of the high school. The average rural district does not pay more than \$50.00 per month; one fifth would be \$10.00 per month; there would be only \$30.00 per month coming from these three districts to be used for high school instruction. Any one can see that this arrangement is not fair. In the last twenty years there has been only two joint high schools established in Missouri. The law should be repealed or so modified that it would be equitable.

### TRANSPORTATION

The School Law of Missouri provides for the transportation of pupils. Whenever it is deemed advisable by the school board or when the board is petitioned by ten taxpayers, the question must be submitted to the qualified voters at the annual or a special meeting. The proposition must be carried by a two-thirds vote of the taxpayers, p. 9, School Laws of Missouri, 1911.

Only pupils living more than one-half mile from the school building can be provided with transportation. The board has power to make all needful rules and regulations for the transportation of pupils and must require a reasonable bond from every person employed for that purpose.

When transportation is provided at public expense, the district should provide the wagon and hire the driver who furnishes the team. The number of drivers will depend on the number of children. In some districts common wagons are used fitted up with water tight curtains. Some schools use the ordinary wagon box with seats arranged along the sides and with a water-proof cover and side curtains. Some use wagons with springs like the dray wagons or those used for express purposes, while others use wagons which look very much like a bus. The kind of wagon needed can easily be determined by the district, and will depend largely upon the amount of money to be invested for this purpose.

# THE UNIVERSITY OF MISSOURI BULLETIN

**EXTENSION SERIES**

VOLUME 1    NUMBER 4

## CORRESPONDENCE COURSES IN HIGH SCHOOL SUBJECTS

A NEW DEPARTURE FOR  
UNIVERSITY EXTENSION



UNIVERSITY OF MISSOURI  
COLUMBIA, MISSOURI  
November, 1913

THE UNIVERSITY OF MISSOURI BULLETIN, EXTENSION SERIES; EDITED BY CHARLES H. WILLIAMS, SECRETARY OF THE EXTENSION DIVISION; ENTERED AS SECOND-CLASS MATTER AT THE POSTOFFICE, COLUMBIA, MISSOURI; ISSUED MONTHLY.

# CORRESPONDENCE COURSES IN HIGH SCHOOL SUBJECTS

The University of Missouri through the United States mail gives you a chance to work for high school credit if you are unable to attend a high school.

These courses are prepared and given by members of the University Faculty. The instruction in each case represents a definite amount of work with credit equivalent to that of corresponding courses given in accredited schools.

**Who May Enroll.**—Any one may enroll who has completed the first eight grades, or their equivalent, of the common school course. However, students enrolled in a high school are not permitted to take these courses during the regular session. Neither are they permitted to take them during summer vacation without the consent of their superintendent or principal.

**Purpose in Offering These Courses.**—To provide a high grade of instruction for persons who do not find it convenient to attend school.

To help persons who are desirous of entering the University, but are a few units short of the entrance requirements, to complete such requirements.

To enable teachers and those desiring to teach, without leaving their homes and while engaged in other work, to comply with those provisions of the school law which require as a prerequisite for examination for first and second grade county certificates after 1912, 1914, 1916, and 1918,, one year, two years, three years, and four years respectively, of high school work or its equivalent.

To give teachers who are working for state certificates, while engaged in teaching or other work, an opportunity to prepare for examinations.

## PROCEDURE

Make up your mind to investigate this opportunity; then write to the Secretary of University Extension for application blank. Fill out the blank fully with the information called for and return it. If your application is approved you will be notified and instructed to remit the required fee to the Secretary of the University.



You will then be enrolled and the member of the faculty who is to have charge of your course will send you the first lesson with instructions for study, methods of preparation, and directions for returning lesson sheets and reports. Thus, assignment by assignment, the teacher will send you the lesson sheets which after you have made your preparation, should be mailed to the teacher who will return them with such explanations, corrections, and suggestions as he deems necessary. Questions, assignments for reading, and lists of books will be furnished throughout the course so that each student will have adequate guidance and assistance. Questions pertaining to the subject under study are at all times encouraged.

**The High School Unit.**—One year's work in a high school usually consists of four subjects; for example, the first year's work might consist of Ancient History, English, Algebra and Physical Geography. The student recites in each of these subjects five times per week, for at least 36 weeks. Each recitation must be at least 40 minutes in length. One such subject, for example, Ancient History, studied for at least 36 weeks is called a "unit." Thus, four units constitute a full year's work in the high school. Four years are necessary to complete a high school. Accordingly in most high schools 16 units (or in some cases 15 units) are required for graduation. For entrance to the College of Arts and Science of the University of Missouri, 15 units are required. Of these, three must be in English, one in Algebra, one in Plane Geometry, and two in foreign language. For entrance to the College of Agriculture 15 units are required, three of which must be in English and one in Algebra. For entrance to the professional schools two years of work in the College of Arts and Science is required.

#### **Cost of Correspondence Courses:**

One-half unit course .....	\$ 7.50
One unit course .....	15.00
Two unit course .....	30.00

**Time of Preparation.**—Each unit of work by correspondence consists of about forty assignments with a minimum time of preparation of 6 to 8 hours each. One hour of study per day should enable the student to finish one unit in 40 weeks. However, any subject may be pursued as rapidly as is consistent with good work. By working more than one hour per day a unit may be finished in less time than 40 weeks.

### **COURSES OFFERED**

**Grammar.**—One unit. A course dealing with the principles of English grammar including sentence analysis.

**Composition.**—One unit. Text, Woolley's "Handbook of Com-

position." The student will be expected to develop during this course the ability to express himself coherently and correctly. He will be expected to master the forms of writing, spelling, punctuation, and sentence and paragraph structure.

**Literature.**—One unit. Text, Tisdell's "Studies in Literature." Will consist chiefly of the study of classics with attention to the lives of the authors studied.

**Literature and the History of English Literature.**—Two units. Includes not only the reading of classics but in addition a rather complete study of the history and development of English Literature.

(Not more than four units may be offered for entrance in English)

**Elementary Algebra.**—One unit. Elementary algebra, including the elementary operations on polynomials and fractions, the solution of single and simultaneous linear equations; simple factoring, simple powers and roots, and the solution of numerical quadratic equations.

**Complete Elements of Algebra.**—One and one-half units. Complete elements of algebra, including the above, and in addition thorough work on quadratic equations, complete work on radicals and fractional exponents, progressions, and logarithms.

**Plane Geometry.**—One unit. The course in plane geometry will cover a full year's work in Ford and Ammerman's "Plane Geometry." Part of the year may be spent upon the application of algebra to geometry, and of geometry to algebra.

**Solid Geometry.**—One-half unit. The work in solid geometry will cover a full half year's work in Ford and Ammerman's "Solid Geometry." The development of the student's space conception is a valuable aim in the work, and it may well be aided by the construction and study of models and by experimental verification of theorems.

**Trigonometry.**—One-half unit. This is supposed to cover a half-year's work in Kenyon and Ingold's "Trigonometry." It includes the elementary notions, logarithms, functions of obtuse angles, solution of right angled triangles, and the methods essential for the solution of oblique triangles. Some familiarity with the formulas involving the functions of the angles is also desirable.

**Ancient History.**—One unit. The history of the Oriental, Greek and Roman Periods as given in a standard high school text, such as Westermann's "Ancient Nations," Botsford's "Ancient World," or West's "Ancient World."

**Medieval and Modern History.**—One unit. The history of Europe during the medieval and modern periods as given in Hard-

ing's "Medieval and Modern History" or other good text of equal scope.

**English History.**—One unit or one-half unit. The political and social history of the English people as given in any good advanced text, such as Cheyney's "Short History of England," or Larned's "History of England." A half unit will be given for work of a less advanced character, based on such work as Ransom's "Short History of England," or Montgomery's "History of England."

**American History.**—One unit or one-half unit. The history of the Colonial and United States periods as given in Channing's "Student's History of the United States," or other advanced high school text. For work of less comprehensive character, only a half unit will be granted.

(A half unit in English or American History will be accepted for entrance only when accompanied by at least one unit in European History.)

**Civil Government.**—One-half unit. A study of the chief organs of local, state, and national government, their relations to each other, and the important functions assigned to each group. Some attention will be given to their historical development. The text used will be Garner's "Government in the United States." No credit will be given unless the student offers at least one-half unit in American History.

**Beginner's Latin.**—One unit. The work included in a standard First Latin Book.

**Second Year German.**—One unit. The course calls for about 200 pages of moderately difficult reading, chiefly prose, with constant practice in written reproduction of selected portions.

**Physical Geography.**—One unit. A careful study of Air, Ocean and Land, with individual experiments and observations by the student on all subjects practicable.

**Agriculture.**—One unit. The unit in agriculture consists of an equivalent of Warren's "Elements of Agriculture" with individual experiments and observations by the student.

**Economics.**—One-half unit. This course will take up the leading facts and principles of economics, including such subjects as division of labor, the factors of production, the laws of diminishing returns, demand and supply, value and price, wages, interest, rent and profits, credit, taxation, regulation of monopolies, and international trade.

**Reading Circle Course in Rural Education.**—One-quarter unit. This course is based on the reading circle books and is intended to prepare students for county and state examinations upon these books. It will not at present count as entrance credit to the University.

(If courses not here announced are desired, write for "Announcement of Extension Division for 1913-14." The University offers correspondence courses in the Colleges of Arts and Science and Agriculture, and in the Schools of Education and Engineering, as well as in high school subjects as here announced.)

## GENERAL INFORMATION.

The cost of courses by correspondence is about one-third that of the same courses, including room and board, to students actually attending the University.

Correspondence work is as thorough as that done in actual attendance.

Courses may be begun any time during the year.

For admission to correspondence courses no preliminary examination is required.

During an instructor's vacation a substitute will be provided to carry on his course.

The maximum amount of work that may be done by correspondence is limited to two and one-half units for any one calendar year.

The time allowed for completing a course is one year from date of enrollment, except by special permission.

No fee is refunded because of a student's inability to finish a course for which he has been enrolled.

The University of Missouri belongs to all of the people of the State, and is desirous of serving you. Now is your opportunity to make use of it. It is prepared through the extension division to go to you.

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All remittances should be made payable and sent to J. G. Babb, Secretary of the University. No one will be expected to send any fees until notified by the Secretary of University Extension that his application has been approved.

For information regarding correspondence courses and application blanks, write to

CHARLES H. WILLIAMS,  
Secretary of University Extension,  
University of Missouri,  
Columbia, Missouri.



# THE UNIVERSITY OF MISSOURI BULLETIN

VOLUME 15    NUMBER 7

EXTENSION SERIES 6

## The Preservation of Food in the Home

BY

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AND

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UNIVERSITY OF MISSOURI  
COLUMBIA, MISSOURI  
March 6, 1914



# Preservation of Food in the Home

## INTRODUCTION

In the household we still work according to rule without knowing the reasons why. Our cooking rules are called recipes. In these we have stated in many cases numerous unnecessary steps and we frequently find very inaccurate statements. The aim of this bulletin is to explain the reasons for the various steps as they are given in some typical recipes for the preservation of food. It is hoped that the explanations given will be sufficient to enable every woman to make better use of the numerous recipes she has already at hand.

**Why Foods Spoil.** We know that foods spoil for two reasons.

1. The most important reason is that there are present all about us tiny plants too small for us to see, which we call micro-organisms. These micro-organisms like the same food we like—meat, bread, vegetables. Most of our plants are green in color and can manufacture from the air and water and soil the food which they need. These plants, micro-organisms, which are so small and so numerous, cannot do this. You might call them lazy little beasts only they are plants and not animals. They prefer to live on our food, and in the process of helping themselves, they in most cases render the food unfit for our use. In order to keep our food sweet and clean, then, we must kill any of these plants that may have got into it before it comes to us; and we must prevent any others from getting in; or else we must keep it under such conditions that any which may be present cannot thrive and bring about their destructive work.

2. The second reason for the spoiling of foods is not so easy to explain. We know that there is a great difference in the ripening of all fruits and vegetables. For example, an apple, a peach, and a quince all ripen differently. During the time that they are growing the same sun is shining upon them and they enjoy the same rainfall. There must be some individual differences which cause the variations in ripening.

The material in the fruit or vegetable which causes the ripening so characteristic of the different kinds is called by the scientist an enzyme. These enzymes aided by the heat of the sun bring about certain typical changes in the fruit or vegetable which we call ripening. It is well known that if these changes continue too long the fruit deteriorates in quality and finally becomes unfit for use. We also know that such changes continue after the fruit has been gathered.

These ripening changes, especially those which occur after the gathering of the fruit, take place with varying rapidity in the different kinds of fruits and vegetables. The possibility of storing any vegetable material depends upon the rapidity of this change. Apples may be stored because



this change is slow. Peaches ripen rapidly and on this account cannot be stored for any length of time.

**Why Fruit and Vegetables Become Stale.** In the household we are not concerned with enzymes in the ordinary methods of preserving foods because the heating necessary to kill the micro-organisms destroys the enzymes also. We are concerned with them, however, when we gather fruit or vegetables for immediate use for we know that the flavor of stale vegetables is due to changes brought about by these enzymes.

Fresh corn on standing becomes less sweet. This is due to the fact that the sugar present when the corn is first gathered is being continually changed by the enzymes to a less sweet material, starch, until this action is stopped by cooking which kills the enzymes. This same change takes place before the corn is gathered, only in this case there is continually a fresh supply of sugar unless the corn is too old, when we know it also lacks its sweet flavor. Similar changes take place in other vegetables, but in most cases it is less noticeable because the differences in flavor are less pronounced.

The delicate flavors of fruits such as strawberries are destroyed by allowing them to stand after they have been gathered. This fact is well demonstrated by the difference in flavor of the berries eaten just off the vine and those which have stood for two or three days in the city market. Therefore, if we wish to preserve the delicacy of flavor in either fruits or vegetables we must can them as soon after gathering as possible, in any case, the same day,

In order to set to work on the problem of food preservation with an idea of finding out the reasons for the various steps involved, we must first know something more about the two causes of decay, the micro-organisms and the enzymes, the conditions under which they live, how they may be destroyed or their action stopped. All this is taken up in detail by the scientist in the study called bacteriology. We can only touch upon it most briefly here.

**The Presence of Air Does not Cause Food to Spoil.** The old idea which is still believed in many places that air causes the decay of food material and that the exclusion of this air in some way helps to keep the food is incorrect. The bacteriologist has found out that if he heats the air before introducing it into food materials it no longer causes them to spoil. From this we know that the air itself does not in any way cause the spoiling. We must keep out the air, however, because there is present in this air large numbers of micro-organisms. For this reason when we are filling cans or jars with fruit cooked outside the can, we fill the can full so as to exclude all air, because we know this air contains some harmful micro-organisms. On the other hand, when the fruit or vegetable is to be cooked in the can we need not worry about the air space because this air will be heated at the same time the fruit is and the micro-organisms in it will be killed in the same way as those which are contained in

the food material itself. Practically, however, whether we cook our fruit outside the can or in the can we know that it is poor economy to leave an air space where we might have fruit.

**How Micro-Organisms Get Into Our Food.** Since we know that our fruits spoil on account of micro-organisms, bacteria, yeast, and mould, and that these small plants are not only present in the air but also in dust, soil and water, and since air comes in contact with all the utensils and materials we are using, we realize how very careful we must be to keep these little pests out of our foods.

**Conditions Under Which Micro-Organisms Grow.** In order to preserve our foods to the best advantage we must know how these bacteria, yeasts, and moulds live. We must know the conditions under which they grow and develop best, we must know the means by which they may be killed or their action stopped. Further than this the housewife must know how to do this with the facilities to be found in the ordinary kitchen.

1. Micro-organisms must have foods similar to our own. They are quite fond of meat, as we know by the readiness with which they destroy it. Some of them like sugar but they cannot live on sugar alone any more than we can. The different kinds are quite like people, having individual preferences. In general, however, it will be found that in order for them to thrive well they must have a balanced ration.

2. They must have something to drink—water. We know that while fresh fruits deteriorate quite rapidly, if we dry these fruits or put them in the sun until the amount of water present is considerably diminished, then the bacteria cannot destroy them. The scientist tells us definitely that the amount of water necessary is 30 per cent.

3. They must have favorable temperature conditions. They live best at a temperature about the same as that of our own bodies. If this temperature is considerably lowered, while they continue to live, they will not develop. We know that ice may contain bacteria and on this account, unless we are very sure of the source of our ice, we must be very careful not to put it directly into water which we intend to drink. If on the other hand, the temperature is increased beyond a certain point, these organisms are destroyed.

**Temperature at Which Micro-Organisms are Killed.** The temperature at which micro-organisms are killed varies with the different kinds. All that are actually growing are killed by boiling. It is well to have in mind just what temperature this represents. If a thermometer is inserted in boiling water, it will register 212° Fahrenheit, or 100° Centigrade.

There are a few, however, that are able to go over into a more resistant form which the bacteriologist calls a spore. Spores are not killed by boiling water unless the boiling is continued for some time. They can be killed by heating to a temperature higher than boiling, or if left after boiling under favorable conditions for 24 hours, they will develop into an active form and then may be killed by simple boiling. This is the scien-

tific reason for a well-known, popular method of canning such vegetables as corn, beans, and peas in which the material is heated for three successive days.

**Methods of Food Preservation.** There is no phase of the conservation of food in the country home that is of greater importance than that which has to do with its preservation. The methods of food preservation now in use may be conveniently classified under five heads:

1. Harmful chemical preservatives
2. Low temperature
3. Drying
4. Heat
5. Harmless chemical preservatives

**Harmful Chemical Preservatives—So-Called Preserving Powders.** Chemical preservatives act in various ways to prevent the growth of bacteria. While some are known to be harmless, and others are known to be harmful, there is a large group about which we are undecided—sodium benzoate, sodium sulphite and boracic acid. These have been the subjects of a great deal of discussion the last few years. Most scientists have now concluded that the majority of them are harmful, at least in the hands of the inexperienced. While we cannot prove this specifically in many cases, we have decided that so long as there is a doubt they should not be used in our foods.

A further objection to their use is that they make it possible to preserve food which is about to spoil and may be in an unwholesome and unsanitary condition.

As a rule, such preservatives have played but a small part in the home preservation of fruits, and the pure food officials are gradually controlling by different means their use in the factories. While some do admit that their use commercially is permissible, they are much more harmful in the hands of the house-wife who does not know just what a particular material is or the dangers which are present in its use.

The factory canner knows what he is using; knows just how much he can use; and can determine that amount accurately. The housewife does not know which of a given list of chemicals is sold to her under the name of preserving powder; she does not know how much she should use, nor is she able to measure it very accurately. Such chemicals are on the market under the name of preserving powders and the unsuspecting housewives buy them, little realizing that they are purchasing in a concentrated form the material which is partially responsible for the feeling which we have toward the factory canned goods. In any case, it is only a substitute for careful, intelligent work, and will not accomplish anything which cannot be gained by the latter.

**Preservation by Means of Low Temperature.** Low temperature is of great commercial importance. The making of artificial ice and artificial refrigeration have done more than any other one thing to make possi-

ble a better distribution of food products. It is used in the home, but is of sufficient importance for another bulletin.

**Preservation by Means of Drying.** Since the development of other methods, drying is not as much used as formerly. It is based upon the fact stated above that when the amount of water in any material is reduced below one-third the bacteria no longer find conditions favorable for development. It has been almost entirely replaced by methods to be considered next. This is not in all cases an advantage because in the dried materials the flavor is frequently preserved to a greater extent, and the bulk is appreciably reduced without any loss of food value. It also is a question worthy of separate consideration so will not be taken up here.

**Preservation by Means of Heat.** This method of preservation of foods is by far the most important and in combination with the use of harmless chemical preservatives, such as sugar, spice and vinegar, goes to make up the chief method of food preservation in the home.

We shall now discuss as simply as possible the few principles which are the basis of food preservation by heat, and show how they may be applied in some typical recipes. The recipes and directions at present available are without number and what is now needed is to get at the important points in each and leave out the unnecessary steps. We can only do this by having a definite idea of what our object is and the best ways of accomplishing it.

In this day and time when there is so much to be done in the farm home, the farm woman will eventually refuse to worry with the details of canning and preserving unless we can show her how they can be done with less expenditure of time and energy. That this is not always done can be illustrated by a quotation from the preface of a popular recipe book on canning and preserving: "While the recipes contained herein are as simply and explicitly described as possible, to insure perfect success time must not be considered and the greatest care taken."

The woman of today must consider her time, especially when recipes call for such a useless expenditure of it. Good examples of this can be taken from the same book quoted above. We are not surprised to hear this author advocate the making of blackberry preserves according to the following rule:

"Spread them out separately on flat dishes, sprinkle with the sugar, and stand aside for one hour; then put them in porcelain lined vessel with all the juice that may have exuded; stand kettle over the fire until the berries are slightly heated, then take them out *one by one* with a spoon and spread them on the same flat dish." . . . And for cherry preserves, ". . . lift carefully *each cherry with a teaspoon* and put into tumblers or jars and stand aside to cool."

The above methods may be used by the woman who has more time at her disposal than she knows what to do with. The country woman probably makes better preserves with less expenditure of time and energy.

Still she is in many cases questioning whether the time necessary cannot be further decreased and is asking for help, especially along that most difficult line of all, vegetable canning.

Realizing the importance of this work in the farm home and realizing that much material was being wasted on the farm, because the methods had not been carefully worked out, the United States Department of Agriculture sent an expert to study factory methods of canning and to adapt such methods to use under home conditions.

A summary of this investigation may be found in Farmers' Bulletin 521, issued by the United States Department of Agriculture. The success of the canning work done by the girls' canning clubs of the country for the last three years has demonstrated beyond the shadow of a doubt that the methods or processes outlined by the canning clubs directors are applicable to any home conditions and can be carried out by even young children.

**Names of Food Preserved by Heat and Sugar.** One other point where we have failed in working out our methods systematically is in having definite standards toward which to work. There is too little understanding of the meaning of various names applied to food products, especially to those in which sugar is used. Indefiniteness in the use of terms is illustrated by comparing recipes for materials called by the same names in the different recipe books.

An effort has been made to systematize the chief points in such recipes in the same way that the men have systematized their stock judging and corn judging work, that is, by making score cards for each of the distinct products. On these score cards the essential characteristics of the different products are listed and a definite value is assigned to each.

It is hoped that such systematization will help both in bringing about more uniform products and in forwarding the educational work which has the preservation of food as its basis. When exhibits of such materials are judged the score may be marked on each can so the contestant will know wherein she has failed.

## CANNING

Canning will be considered first because we are concerned simply with the use of heat in killing micro-organisms and the subsequent prevention of the entrance of others. What we desire in the canned product is to have the flavor of the fruit or vegetable as nearly as possible like that of the fresh fruit. We cannot have the same flavor, since heating always changes the flavor to a certain extent, and the heating is necessary to kill the organisms and any enzymes present. Underripe fruit or vegetables, or those that have been kept too long after gathering, cannot be expected to taste well after canning. The best rule is not to can any material which you would not be able to serve on your own table immediately. All green vegetables, such as peas, corn, etc., should be taken early before they lose the sweet taste that is before the sugar is changed to starch.

We should also remember that if vegetables are kept too long after being gathered, the change from sugar to starch may be brought about by means of the enzymes present.

### MATERIALS NEEDED

A. Fruit or vegetable to be canned.

B. Sugar will be needed in canning fruit. The sugar should be pure and white. We have no difficulty now in obtaining pure, unadulterated sugar. Because of the former practice of adulterating loose sugar, many older English recipes call for loaf sugar, which was at one time the more pure form. One of the writers was much surprised, on going into a kitchen at Christ College, Oxford, England, to find the cook there, a "mere man," with a hammer pounding up loaf sugar for use in making marmalade, because the recipe called for it, in that form. An illustration of such recipes is the following quotation from a marmalade recipe in an English book on preserving. ". . . only the best materials should be used, for example, Seville oranges and lump sugar."

C. Salt will be needed for the vegetables. Any pure coarse salt is perfectly satisfactory. Prepared table salt usually contains some other material which may prove objectionable.

### UTENSILS NEEDED

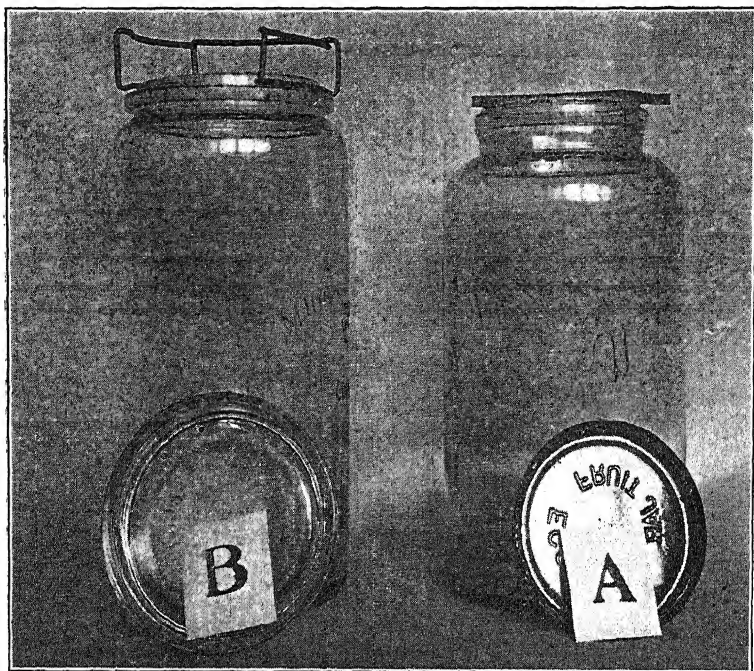
A. Cans or Jars. Tin cans are cheaper but since most of them can be used only one year, glass jars are more satisfactory and often less expensive in the end, though they cost more at first. In case the canned material is to be sold, tin cans will be more satisfactory because they can be more readily packed and shipped.

1. **Characteristics of a Good Glass Jar.** A good jar must be capable of keeping out air. No metal should come in contact with the contents. The top or the part of the top which comes in contact with the material in the jar should be all in one piece, so as to offer no place for the accumulation of dirt, etc. The sides of the jar should be as nearly straight as possible so that the vegetables can be put in whole or in large pieces. Such a jar is easier to clean.

2. **Different Types of Jars.** No effort will be made here to defend the advantages and disadvantages of the different types of jars. Probably the best is the one with a glass top, held down by a metal spring arrangement.

3. **Selection of Jars.** Jars should be carefully selected, making sure that the edges are smooth. They should be tested before being used to be sure they are air-tight. To test them, fill the jar with water, adjust top and rubber, invert, and if no water escapes the jar may be considered air-tight.

4. **Rubbers and Tops.** Much material is wasted by false economy in using imperfect covers and rubbers for the second time. The covers



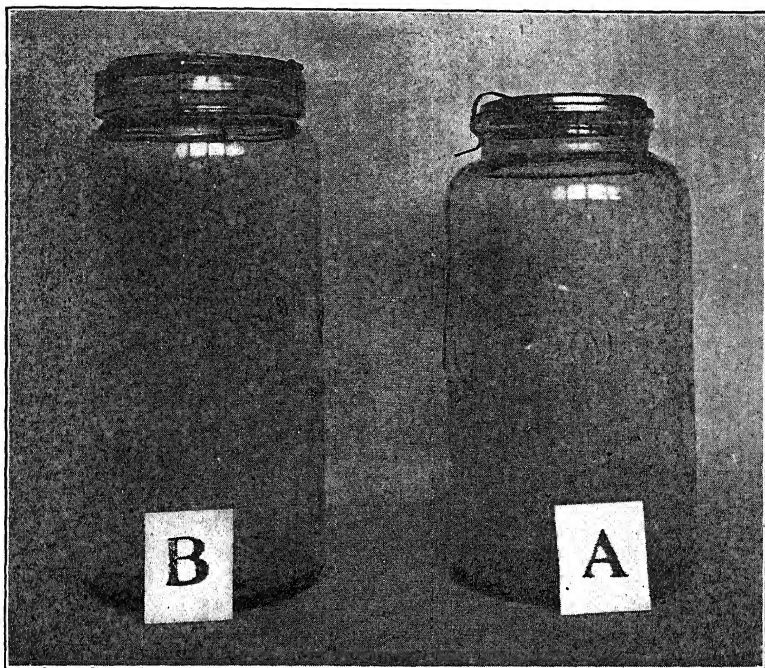
### TWO TYPES OF JARS

A, metal top; B, glass cover with metal clasp, open.

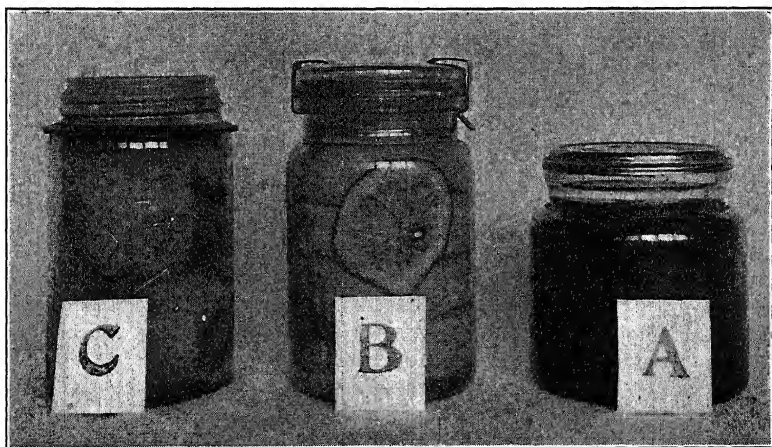
of screw top jars may be kept in good condition for several years, provided proper care is taken in opening the can. The usual custom of loosening the cover with a knife is a bad one in that it frequently destroys the value of the edge as a seal. The better way is to remove the rubber by pulling it out from the edge. This destroys the rubber so there is no further temptation to use it again and at the same time the cover is loosened without being bent.

**B. Canners.** There are on the market at the present time many different canners most of which are good. For the average home the purchase of a canner probably will pay by the fruit and time that it will save. However, the housewife should consider carefully the merits of the different types of canners in order to decide which best suits her individual needs.

**Home-Made Canner.** A home-made canner which will do very satisfactory work, can be improvised from utensils to be found in any kitchen. While we appreciate the value of a commercial canner, each homemaker should decide for herself whether the amount of canning she does will justify the investment.



Same as on Page 10, Sealed.



#### DIFFERENT TYPES OF JARS

A, metal top, vacuum seal; B, glass top, vacuum seal;  
C, ordinary screw top.





#### OPENING A CAN BY REMOVING THE RUBBER

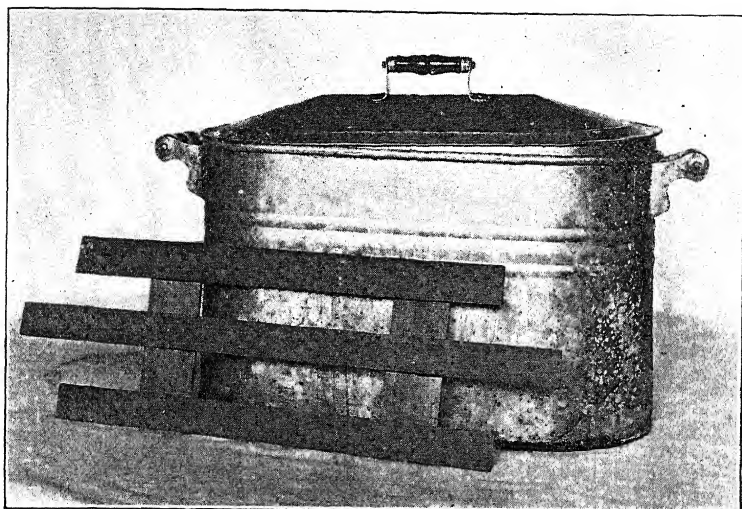
A practical housewife gives the following instructions:

"At a cost of two dollars we have a home-made steaming vessel. It is made of heavy galvanized iron. It is ten inches wide by fourteen and a half inches long and twelve inches deep. It has a perforated false bottom, with short legs to raise it off the bottom of the vessel. On this false bottom the jars are placed to prevent burning or scorching. The cover is close fitting and braced across with strips of the same metal to prevent warping.

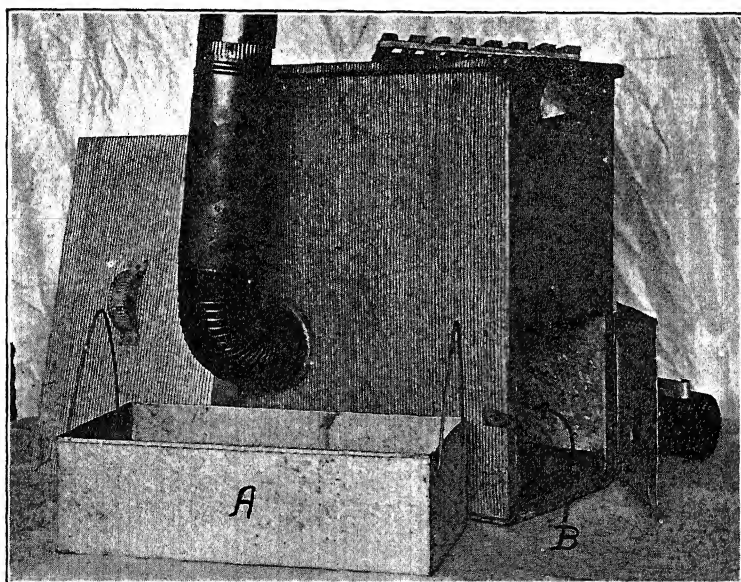
It holds six quart or half-gallon jars and is invaluable and indispensable. In this way we make a kind of wholesale job of canning, and often, for the sake of economy, place the steamer on the kitchen stove while the cook is preparing dinner. Oftentimes we use the coal oil stove to avoid the heat of the cook stove, preparing the vegetables in a cool place, or out on the porch, not touching them until steamed."

1. **Water Bath Canners.** There are three general types of canners on the market. The simplest is known as the water bath. It consists of a containing vessel with a rack and a cover. As the rack has handles to it, it serves not only to keep the jars off the bottom but at the same time as a means of lifting the jars into and from the hot water. There are utensils in every home from which such a canner can be made.

For example, we may use as the container a wash boiler, any type of pail with cover or anything else to which a tight fitting cover can be made. A rack may be made of boards, heavy screen, or tin.



A WATER BATH CANNER IS POSSIBLE IN ANY HOME  
Wire handles to the rack make the lifting easier.

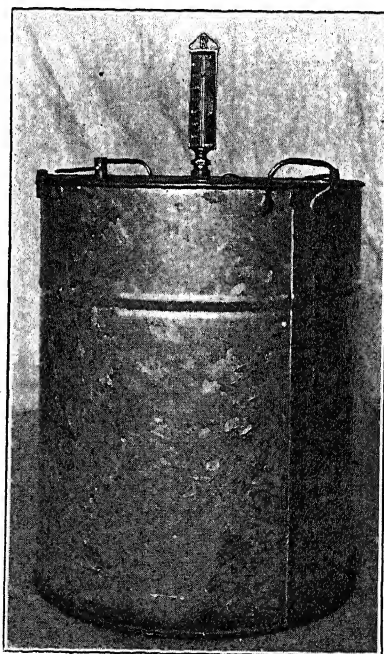


PORTABLE WATER BATH CANNER  
A, rack for holding cans; B, fire box with water container above.

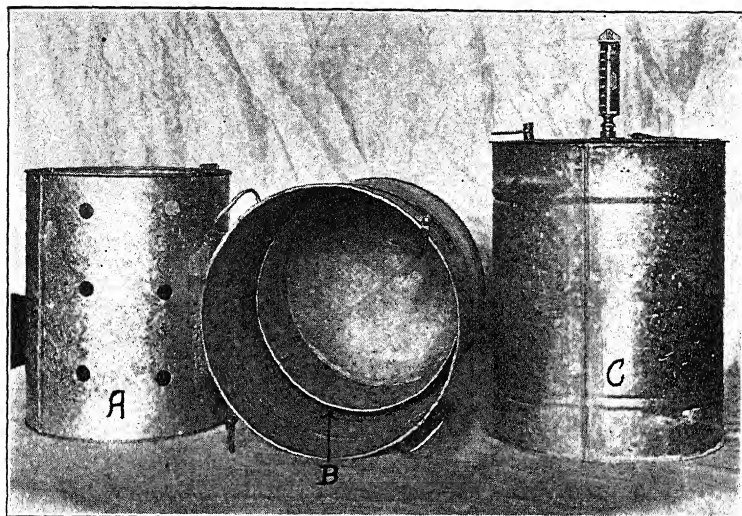
2. **Water-Seal Canners.** The second type is known as a water-seal canner. It is a more complicated apparatus and one in which we are able to obtain a temperature higher than boiling ( $212^{\circ}$  F- $218^{\circ}$  F). The high temperature is possible because the top fits down very closely and securely, and because of the triple thickness of the walls as shown in the illustration. The chief advantage of the water-seal type is that the cooking time is shortened. For further details see the accompanying diagram.

3. **Pressure Canner.** The third type of canner is known as the pressure cooker. It is manufactured of various materials, ranging from cast-iron to aluminum, and in various shapes. The distinguishing features are a securely fastened top which makes possible increased temperature and pressure, and a pressure gauge. Most of them also have a thermometer.

C. **Miscellaneous Utensils.** Before beginning to can have conveniently placed a sufficient number of sharp knives, knives which are adapted to the work to be done, and any other utensils which may be needed. There are various devices on the market which are cheap and save much time by making more easy such operations as paring, coring, slicing, etc.

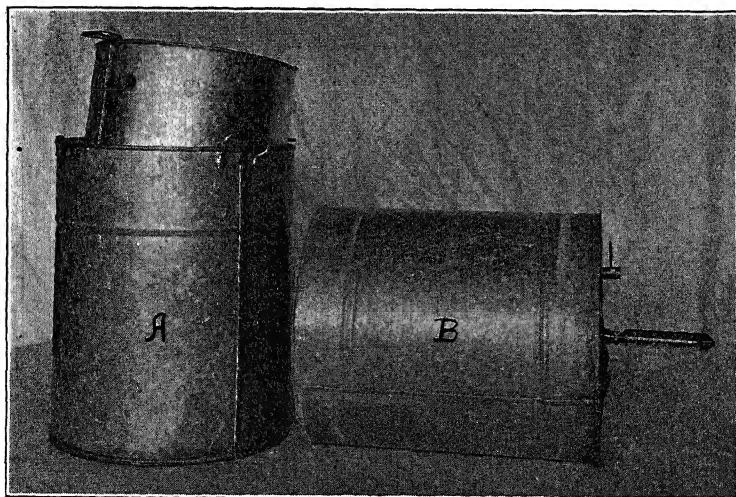


**WATER SEAL CANNER, CLOSED**  
Note thermometer on top.



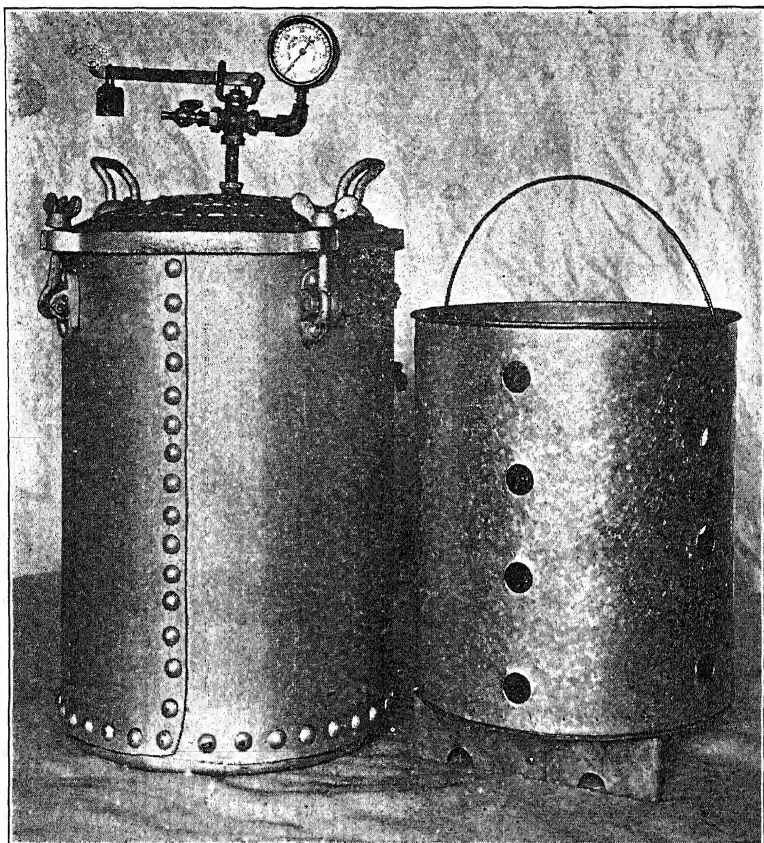
#### WATER SEAL CANNER, OPEN

A, rack for holding cans; B, container with double walls; C, cover which fits between the double walls of the container. This helps to conserve the heat and a slightly higher temperature is reached than with plain water bath.



#### ANOTHER VIEW OF THE WATER SEAL CANNER

A, container with rack partly inserted; B, cover.



### PRESSURE CANNER

The clamps fastening down the top make a higher pressure and temperature possible.

Before purchasing such devices the same question should be asked as was suggested in the case of the canner. The housewife should be sure that she will use it enough to warrant the investment. Too many utensils are not advisable. A few well chosen, simple utensils take less work to care for and in the end do better service than those which are more complicated. The added trouble of the care and storage of complicated devices in many cases outweighs any added utility they may possess.

### PLANNING THE WORK

1. **Time and Place.** Canning would lose a great deal of its drudgery if the operation were thoroughly systematized. It should be planned for a time least likely to be interrupted by other household tasks. Much

nervousness results from the attempt to attend to two different lines of work at the same time and neither is done well.

The air in the room in which the canning is done should be as free as possible from dust. There should be plenty of table space and the tables should be so placed with reference to the stove and water supply as to avoid as much lifting and carrying as possible. In the summer time the work can be done in many cases with less worry and always more pleasantly out-of-doors. This is quite possible with one of the small portable canners or even an oil stove.

2. **Sterilizing the Cans.** The first step in the operation is sterilizing the cans. They should be carefully washed and may be sterilized in the canner or by boiling in a separate vessel provided for this purpose. In case a vessel without a rack is used, something must be placed in the bottom to hold the jars off it, otherwise the uneven heating will cause them to crack. The water should be cold when the jars are put in and heated slowly.

While sterilization is not absolutely necessary when the fruit is to be cooked in the jars, it is a wise precaution to take and it heats up the jars so that when the work is done quickly there is less danger of breaking them.

3. **Length of Time the Various Materials Should be Heated in the Cans.** Since different types of micro-organisms live on the different varieties of fruit and vegetables, the time necessary to cook the different ones varies.

**Time Table**

This table shows the time to be followed in the use of the four different types of portable home canners.

	Size of cans.	Hot-water bath outfits at 212°	Water-seal outfits above 212°	Steam pressure cooker 5 lbs. or more.	Pressure cooker 10 lbs or more.
		Min.	Min.	Min.	Min.
Apples.....	3	15	15	10	6
Apricots.....	3	15	12	10	6
Asparagus, greens.....	2 or 3	60	60	40	30
Apple cider.....	2 or 3	20	15	12	10
Beans, Lima and string.....	2 or 3	90	60	60	30

	Size of cans.	Hot-water bath outfits at 212°	Water-seal outfits above 212°	Steam pressure cooker 5 lbs. or more.	Pressure cooker 10 lbs. or more.
Blackberries, Dewberries.....	2 or 3	8	8	6	3
Cherries, Peaches.....	2	15	12	10	5
Corn without acids.....	2	240	180	60	40
Grapes, Pears, Plums.....	2	15	15	10	6
Hominy.....	3	60	50	40	35
Huckleberries.....	2	10	8	6	3
Okra.....	2 or 3	60	60	40	30
Okra and tomatoes combined..	2 or 3	50	50	40	30
Oysters.....	1	50	50	40	30
Peas, (field).....	2	60	60	40	30
Peas (garden or English).....	2	60	60	40	30
Pineapple.....	2 or 3	30	25	18	10
Raspberries.....	2 or 3	15	10	6	3
Sauerkraut.....	3	50	50	40	25
Sausage.....	2	60	60	40	35
Sweet potatoes.....	3	80	70	60	40
Strawberries.....	3	10	8	6	3
Succotash.....	2 or 3	60	60	40	30
Tomatoes.....	2 or 3	22	20	10	6
Tomatoes and corn.....	2	80	70	60	40
Grape juice.....	2	15	15	10	5
Quince.....	3	30	25	15	10
Tomato juice.....	2	20	20	15	10
Pumpkin.....	3	50	50	40	30
Fish, pork.....	2	200	200	120	60
Chicken, beef.....	3	250	240	180	40
Figs.....	3	30	20	10	5
Squash.....	3	50	40	30	20
Spinach.....	3	60	60	40	30
Other greens.....	3	60	60	40	30
Rhubarb.....	3	25	25	15	10
Beets.....	3	20	20	15	10

NOTE: This is a supplement to Farmers' Bulletin No. 521. By following the general instructions of the bulletin in connection with the time table, you will have the information necessary to do the work of canning all kinds of fruit and vegetables.

The operation from now on can be best illustrated by some typical examples. We might start with strawberries, since they are considered the most difficult to can.

**Canning Strawberries.** The berries should be picked over, washed, and hulled. The washing can be carried out best in a colander or sieve of some kind so as to do away with as much handling and consequent bruising as possible. The berries can be placed directly in the jars.

Make a syrup using equal measures of sugar and water. Heat it just enough to dissolve the sugar. As soon as the jars are filled, the berries should be covered with the syrup. The covers are then fitted on loosely and when the rack is filled, all the jars are lowered at once into the sterilizer and left for the length of time indicated in the above table.

If the work has been done rapidly the glass jars will be warm enough from the sterilizing to render breaking unlikely. Each canner is usually provided with two racks so that while one lot of fruit is being sterilized another rack can be filled with a second set of jars. It will then be ready to take the place of the first when the time required for cooking is over. The time can be found by referring to the above table. For strawberries we see that it is ten, eight, five, and three minutes depending upon the type of canner used.

Proceeding in this way we are able to can strawberries with more than twice the rapidity of the open kettle method, and at the same time retain more of the flavor, color, and shape.

**Canning Peaches.** In canning peaches the operation is the same except that a preliminary scalding is necessary to remove the skins. The practice of peeling a peach with a knife is wasteful both of time and peach. The usual objection to the hot dip is that it softens the peach too much. This softening is in part avoided by dipping the peaches in cold water after the hot dip. The operation is made much easier if the fruit is put in a square of cheesecloth. The corners of the cheesecloth make a very convenient handle by means of which the fruit may be lifted in and out of the water.

Scalding and dipping in cold water can be carried out either in the canner itself or in any bucket or open kettle. After such treatment the skin can usually be removed quite easily without the use of a knife. The stone may be removed or not as desired. When left in they give a slight flavor to the fruit which is desired by many. The peaches are then put into the cans and the same syrup used for strawberries or one with more sugar is poured over them. On looking at the table we see that the time for cooking peaches is fifteen, twelve, ten, or eight minutes according to the type of canner used.

**Canning Tomatoes.** In canning tomatoes the operation is the same. They may be canned whole or in pieces, depending upon the size of the tomatoes, the size of the jars, and the use to which they are to be put. Instead of adding syrup, tomato juice and salt should be used, a teaspoon-



ful of salt to each quart. The practice of adding water to tomatoes is to be discouraged, since they already contain so large a proportion of water that any further addition tends to decrease both food value and flavor.

**Canning Corn.** Corn may be taken as another type to illustrate the methods of canning vegetables. Corn has for a long time been recognized as one of the most difficult of all the vegetables to keep. The process differs but slightly from those already described. The time of heating is longer.

The corn should be freshly picked. The cooking of corn while still on the cob for 10 minutes sets the milk and less is lost in the process of cutting off. The jars should be previously sterilized, as usual, and the corn packed in tightly. Add one teaspoonful of salt to each quart and the jar may then be filled with the liquid in which the corn has been cooked. The covers should now be placed upon the cans and the rack lowered into the sterilizer. The time necessary for sterilization is 4 hours, if the water bath cooker is used, 3 hours with the water-seal apparatus, and an hour with the pressure cooker. Where only the water bath apparatus is available fractional sterilization is better.

**Canning by Heating on Three Successive Days.** By fractional sterilization we mean the cooking of the material to be canned for a shorter length of time than is necessary for complete sterilization, on three successive days. It is one of the ways in which we are able to kill those micro-organisms which form spores (see page 5).

The time necessary is usually about 1 hour on each of three successive days. The time depends upon the size of the can and the consistency of the material. It is one of the safest ways to can those vegetables which ordinarily give trouble. While it is slightly more difficult than the method which involves only one cooking, it can be used in cases where the other has proven to be ineffective.

The method of cooking three successive days may be applied to all types of green vegetables, such as peas, beans, etc., with slight differences in the preparation and the length of time of cooking.

This method has been described by a practical housewife as follows:

"Spinach, Swiss chard, lambs quarter, are cooked down until tender in salt water in open kettle in order to get more bulk into cans. Then put into the jars until nearly full and pour on enough hot water to fill the jars full; to this add a scant teaspoonful of salt; put on the lid and screw down loosely without rubber (to allow steam to escape); put into steamer, which should be kept about two-thirds full of water, and boil one hour for each of two days. On the second day of boiling, about fifteen minutes before time is up, unscrew tops, put on rubbers and screw down tight and place back in steamer for fifteen minutes so as to seal rubbers. See also that the jars are full of water at the last cooking.

"The eggplant must be cut into slices and parboiled in salt water until tender; then place in jars and follow directions given for spinach.

"Peas, beans and all vegetables must be young, tender, and freshly gathered. Put into the jars cold; cover to overflowing with cold water

and put a full teaspoonful of salt to the quart; screw on the lid lightly, without rubbers; place in the steamer with enough lukewarm water to come up two-thirds on the jars (always keep adding boiling water to keep it just this high on the jar); steam for three days, one hour each day; then follow directions for spinach, etc., only do not put on rubbers until the third day—this holds good for all vegetables.

“This may seem a great deal of trouble, but will prove very simple when once tried. You simply lift the steamer from the stove, leaving the jars in it until the next day, when you put back on stove and proceed as directed. If you have more vegetables than the steamer will accommodate at one cooking, the jars can be removed and a cloth thrown over them to prevent a draft of air from striking the jars and breaking them.”

Be careful that the jars do not touch each other in the steamer, as they will crack if they do.

**Blanching.** The government canning experts advocate the blanching of all vegetables before canning. By blanching is meant dipping in hot water for varying lengths of time, depending upon the material used. Blanching is supposed to set the color, get rid of certain volatile gases and make unnecessary the exhausting process which has been considered an essential step in canning in tin.

It should be borne in mind that in blanching a considerable amount of soluble material is lost. In the case any liquid is needed in the can this liquor should be used instead of water. With the bulky green vegetables a considerable shrinkage is brought about by the blanching. The shrinking makes it possible to fill the jars to much better advantage. The first cooking suggested above does all this without any loss of pot liquor.

We cannot urge too strongly the canning of all types of vegetables, for this is the best means of obtaining a well-balanced ration throughout the year. It will have the effect of making the garden last all the year round. In planting the garden this use should be kept in mind in order to furnish vegetables in sufficient variety and amounts for canning.

## FRUIT JUICES

**Value.** There is too little appreciation of the many uses to which fruit juices may be put in the home. Their preparation is simple and takes little time or skill. Nothing is more refreshing on a hot day than an iced fruit juice which can be very easily prepared if the juice has been bottled at the proper season. Not only it is possible in this way to obtain the fruit juice for use at any season, but the amount of work involved is far less when the juice is extracted in quantity than when it is extracted in small amounts for occasional use.

**Uses.** Such juices may be used as a very pleasant addition to the daily menu as they lend themselves easily to many uses, such as ices, flavoring ice-cream, gelatine desserts, puddings, sauces, etc. Thus they make it

possible to greatly vary the dessert portion of the menu with little outlay of money, time, or strength.

**Making.** Any juicy fruit will give a good return in bottled juice. This may be extracted in the cold by the use of a fruit press as in cider making or with a smaller press. In case no press is used the fruit is cooked until the juice is extracted and drained as in jelly making. The extracted juice may then be put in bottles, sterilized, securely corked and sealed and labeled.

## PRESERVATION BY MEANS OF SUGAR

Before our knowledge of bacteriology made it possible for us to can vegetables to the extent we now do, we made much greater use of the harmless chemical preservatives in the keeping of fruit. Sugar is the one which has been most used. There are two reasons why it is easier to preserve fruit when a large quantity of sugar is used.

In the first place, liquids which contain sugar can be heated to a much higher temperature than that to which water alone can be heated. The higher temperature will effect a more complete sterilization. Furthermore, micro-organisms cannot live in a solution of sugar as concentrated as that found in the usual preserves, jams and jellies.

The latter fact makes it unnecessary for us to seal these products in the same tight way that the canned foods must be sealed. The only precaution is that they should be covered to prevent the absorption of moisture because such a concentrated solution absorbs moisture from the atmosphere very readily. As a result any micro-organisms present will find the soil sufficiently dilute for their growth.

In order to prevent the growth of micro-organisms when the preserves are not to be sealed in jars, we cover the jars with paraffin. Though paraffin does not form an air-tight seal still it is sufficient to prevent the absorption of moisture and keep out the greater number of the bacteria. Since the paraffin cover is very easily broken, it must be protected by a tin cover or a heavy piece of paper pasted over all.

**Various Fruit Products Preserved by Sugar.** There are several names variously applied to different combinations of fruit and sugar, depending upon the proportion of the sugar used, the kind of fruit, and the part of the fruit. There is here, however, as with many other household products little uniformity. Listing the more familiar ones, we have preserves, conserve, jams, marmalades, butters, and jellies. It is worth while here as elsewhere to establish definite standards by which we may judge our products. It is difficult to produce something when a given word has a different meaning to each one. An attempt has been made to find the meaning which is most common.

A number of recipe books, books on canning, etc. have been reviewed and as far as possible the data summarized. Wiley in his "Food and Their Adulterations" (page 375) distinguishes between terms as follows:

“When the fleshy portion of the fruit is treated with sugar syrup and boiled it produces a product known as preserves; when a fruit product is reduced to a pulp and treated with sugar syrup and boiled, it makes a product known as jam, when the fruit juice itself is treated with syrup and boiled it makes a product known as jelly.” These are given as general definitions, but are too general for our purpose. Jelly probably can be disposed of first.

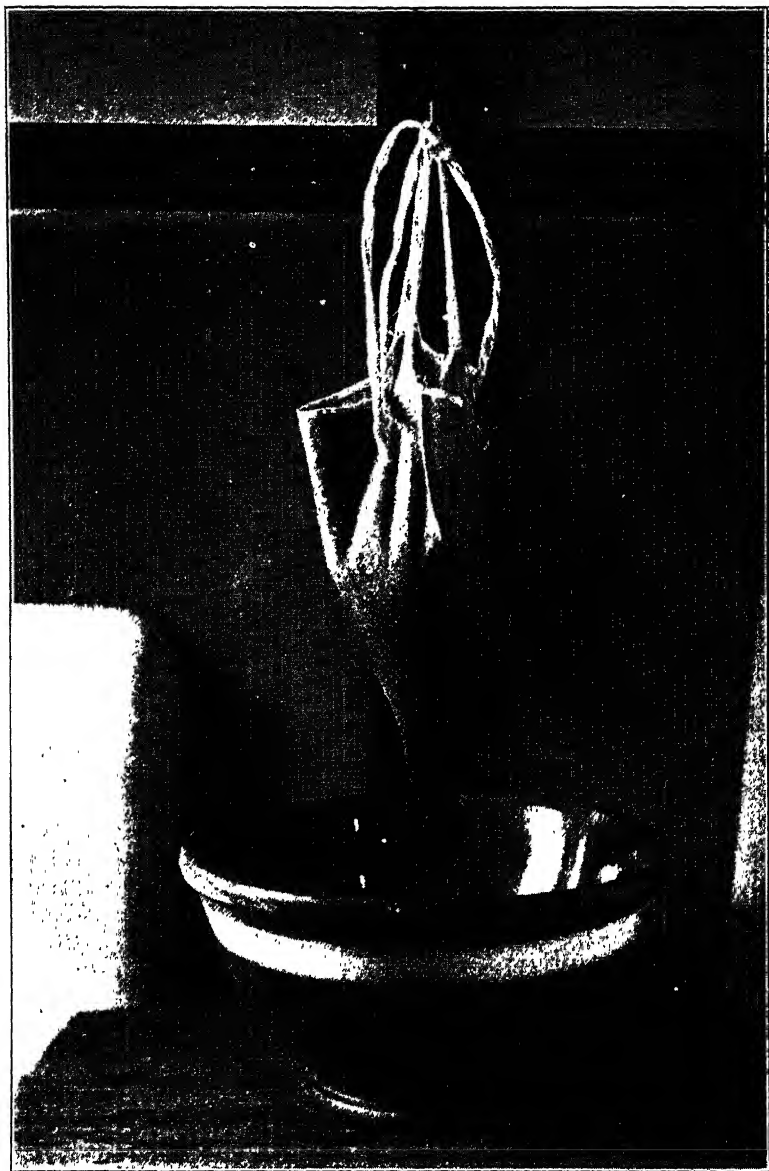
**Jelly.** No better definition can be found than the one given by Miss N. E. Goldthwaite (University of Illinois Bulletin, Vol. 8, No. 7, Principles of Jelly Making). “Ideal fruit jelly is a beautifully colored, transparent, palatable product obtained by so treating fruit juices that the resulting mass will quiver, not flow when removed from its mould; a product with texture so tender that it cuts easily with a spoon and yet so firm that the angles thus produced retain their shape; a clean product that is neither syrupy, gummy, sticky nor tough; neither is it brittle; and it will break with a distinct, beautiful cleavage which leaves sparkling, characteristic faces.”

All fruits as ordinarily used will not make a jelly as those of us who have followed the recipes in cook books will know. A thick mass is obtained in many cases which might be called either a syrup or a candy, but no one in their sanest moments would identify it with a jelly as described above.

In order to be used in making a satisfactory jelly a fruit must contain acid and pectin. The pectin is a carbohydrate which has been very little investigated. For our purposes it is sufficient to know that it is essential for successful jelly making. We may determine whether or not it is present in any given juice by adding to a small amount of that juice while cold an equal amount of ordinary alcohol (90 per cent to 95 per cent). If pectin is present a gelatinous mass will appear which can be gathered upon the end of a glass rod or a spoon. If there is none the solution should remain clear.

**1. The Best Fruits for Jelly.** The ideal fruits for jelly making are those which contain both acid and pectin, such as currant, partially ripe grapes, crabapples, sour apples, and plums. Blueberries make a surprisingly good jelly, while blackberries and raspberries may be used. Peaches, quinces, pears and sweet apples contain large amounts of pectin, but an insufficient amount of acid to cause the jelly to form. However, very desirable jellies can be formed from these fruits by the addition of acids, tartaric or citric, to the juice. One level teaspoonful to a quart is usually sufficient, but much depends upon how acid the fruit is in the beginning. Stir to be sure that all the acid crystals are dissolved, then taste the juice. It should be about as acid as the juice of good tart apples.

The addition of so large a quantity of acid, while it enables you to make jelly from peach and pear juice, necessarily destroys the delicate flavor of these fruits. Jelly from sweet apples and quinces is improved in flavor by the acidity. Cherries and strawberries, though they contain both



#### A JELLY BAG

If the top were fastened to two nails instead of one the material could be introduced more easily.

acid and pectin, do not make ideal jellies. Miss Goldthwaite found that the quality of strawberry jelly was improved by the addition of a small amount of acid, but the flavor was not so good. The cherry juice was already so acid that no more acid was added. Both strawberry and cherry juice were found to yield a better quality of jelly, though by no means perfect, if cooked to a slightly higher temperature than ordinarily, thereby reaching a greater concentration. Pineapple was the only fruit investigated which contained no pectin.

2. **Extraction of the Juice.** Heating is necessary in order to extract pectin from the fruit. Frequently when no pectin is found in the raw, pressed juices of certain fruits, juice cooked out of the same fruit will yield large amounts of it. To juicy fruit add just the smallest possible amount of water and when heated through crush the fruit and cook the whole mass throughout.

Strain through moistened double cheesecloth or flannel bags. The fruit may be extracted a second or third time, a weaker extraction being the result in each case. The pectin test given above will show when the extraction has gone far enough. The less juicy fruits are used in the same way, only more water is necessary.

3. **How Much Sugar to Use.** Where most jelly makers fail is in the use of too large a proportion of sugar. Equal measures of juice and sugar is the usual way in which this proportion is stated. The indefiniteness of such a statement is at once realized when one knows that the proportion of sugar should be based upon the amount of pectin in the juice rather than the total amount of juice.

For those fruits which contain the largest amount of pectin and for those in which little water is used in order to extract the juice, the larger proportion of sugar may be used. When too small a proportion of sugar is used a tough jelly results. In case a jelly is too soft and inclined to be stringy, a smaller proportion of sugar will give better results. In no case did Miss Goldthwaite find that a proportion of sugar larger than one measure of sugar to one measure of juice was desirable. On the other hand, in many cases a more ideal jelly was made upon the proportion of  $\frac{3}{4}$  as much sugar as juice. This result was obtained when water had been used in extracting the juice or when the pectin content was not especially high, as in some of the berries.

Since the juice from the second and third extraction must necessarily contain little pectin, a smaller proportion of sugar should be used, sometimes falling as low as  $\frac{1}{3}$  as much sugar as fruit juice. The only means we have of judging whether or not the proportion of sugar is correct is by the character of the resulting jelly. The more sugar the more jelly or syrup, but we are aiming for quality not quantity. Repeating the statement made above, a tough jelly indicates too little sugar, a soft, sticky jelly (provided both pectin and acid are present) indicates too large a proportion of sugar. If your jelly is not a suc-

cess, cook it over, making the necessary corrections by adding sugar or juice as indicated. Only bear in mind the fact that if the pectin is cooked too long with the acid present, it may be destroyed and no jelly can be obtained.

4. **Aim in Making Jelly.** In jelly making our aim is to change the liquid fruit juice into a solid or make it jell, as we say. This is brought about by the combined effect of sugar, acid, and boiling upon the pectin of fruit juice. The effect is to cause the pectin to precipitate in a solid mass throughout the fruit juice, forming jelly.

5. **How Long Should Jelly Cook.** We have discussed the other three elements, the pectin, the acid, and the sugar, the question remaining is how much boiling is necessary. The jelly forms only when the fruit juice and sugar are boiled to a definite concentration. The time necessary to bring about concentration ranges from eight to thirty minutes. As would be expected, the jelly in which the proportion of sugar and juice is equal will reach the concentration sooner than one in which  $\frac{3}{4}$  as much sugar as juice is used.

6. **How to Tell When Done.** The jelly test is "that point at which the boiling mass 'jells', shuts off or breaks off, as a portion of it is allowed to drop from the stirring spoon." Since the concentration may be accurately determined by the temperature of the boiling solution, this point may be determined by reading a candy thermometer, the bulb of which is suspended in the boiling syrup. When it registers 103° Centigrade or 216° Fahrenheit the jelly is done.

7. **When to Add Sugar.** The best time to add the sugar seems to be after the juice has boiled about fifteen minutes, or for a length of time which experience tells you is about half that sufficient to cook the jelly. If the sugar has been heated before adding, it does not cool the jelly and make the cooking time longer.

8. **Skimming.** The juice should be thoroughly skimmed before adding the sugar. One very interesting economic point brought out by Miss Goldthwaite is that the skimmings are very much increased in amount when the sugar is added at the beginning, due of course to the presence of sugar in them. On the other hand, if the sugar is added too late it is not cooked sufficiently and the jelly may crystallize.

The above points can best be summarized by giving definite directions for making one of the typical jellies.

### APPLE JELLY

1. **Extraction of Juice.** The same rules of cleanliness should be observed in jelly making as in canning. Whole apples may be used. They should be well washed and cut into small pieces to make it easier to extract the juice. As the pectin is more abundant just beneath the skin and around the core, such refuse portions from other operations may be used for jelly making. As small amount of water as possible is used

and the whole is cooked until the apple is well softened. Cooking is necessary in order to extract the pectin. The extraction of the apple juice in the cold, as in cider making, does not take out the pectin. For this reason it is impossible to make jelly from cider.

After the fruit is thoroughly soft, put in a bag and allow to drain. If the bag is a pointed one, the draining may be accomplished in a shorter time because of the pressure of the pulp into the point. When a clear jelly is desired, the fruit is allowed to drain naturally, but if we want to get all of the juice out, the bag may be squeezed. This squeezing of the bag results in a cloudy jelly. It is a question whether we should sacrifice the amount for the appearance. The advantages of both may be obtained by cooking the two lots of juice separately.

All the jelly making portion is not extracted by the first cooking. If a small amount of water is now added and the pulp recooked, jelly can still be made from the juice which results. The second portion is apt to lack flavor. Flavor may be added in the form of a juice which, although possessing good flavor, will not jell, such as peach, cherry, or strawberry.

2. **Cooking.** After the juice is drained it should be measured and put to cook again in a clean vessel. Let it boil up and then skim. The sugar may be heated in the oven, if it can be watched and burning prevented. The only object of heating the sugar is that if cold it would stop the boiling, thus slightly increasing the cooking time. The longer cooking also has a slight tendency to produce a darker jelly. Skim again if necessary. Cook until it will jell.

3. **When Cooked.** The easiest and safest way to test is by the thermometer. When the thermometer is inserted in the solution and registers 103° Centigrade or 216° Fahrenheit the jelly is done. (Care must be taken not to touch the bottom of the kettle with the thermometer as that would give the temperature of the kettle bottom rather than of the syrup.)

The experienced jelly maker can safely use other tests, such as dropping a few drops of the liquid on a cold plate. If it shows signs of jellying when perfectly cold, the proper point has been reached.

4. **Putting Into Glasses.** If the jelly is strained into glasses, a clearer product will result, but the added labor and the risk of loss through slow action is usually greater than the value of any gain in clearness.

5. **Covering.** There are many ways of covering jelly, any one of which may be used. The object is merely to protect from molds, and insects and to prevent the jelly from either drying out or absorbing water. The jelly may be brushed with alcohol and covered with hot paraffin. A tin cover may be used or paper may be pasted over the jar. Always label carefully, as much trouble is eliminated thereby.

**Using Paraffin.** It is a good plan to keep on hand a small vessel for melting paraffin and to use it only for this purpose. One that will fit into the top of the teakettle is especially handy. The pieces of the paraffin





### AIDS FOR THE SEALING AND LABELING OF CANNED GOODS.

which have been removed from jelly may be washed and saved, then used from year to year. Paraffin is difficult to remove entirely from a vessel in which it has been melted. A good plan in such a case is to fill the vessel brimming full of boiling water and allow it to stand undisturbed until the water is cold. All the paraffin will be found solidified on the top and may be removed and saved.

**When the Jelly Has not Been Cooked Sufficiently.** If the jelly is but slightly soft, leaving the glasses in the sun for a day or two will be sufficient to complete the jelying process. The jelly should be covered to prevent dust accumulating upon it.

**Other Kinds of Jelly.** The process of jelly making does not vary, all kinds being made in the same way. The ripeness of the fruit often determines the color and flavor of the resulting jelly. For instance, Concord grapes, picked while green, give a very light colored jelly and one that possesses a different flavor than that made from the ripe grape.

Numberless varieties of flavor may be made by a judicious blending of fruit juices. But as this is a matter largely of personal preference, it will not be enlarged upon here.

**Advantages of Canning Fruit Juices for Jelly.** It is sometimes better simply to can the unsweetened juice and make the jelly at a more suitable time. Several advantages are:

1. It makes it possible to work under easier weather conditions, as most fruits are available at the hottest and busiest time of year. Jelly making comes at a time when the out-of-doors is most beautiful and one can find many winter days better adapted to jelly making.

2. The advantage which will appeal to many is saving storage room. Much juice can be stored in half gallon and gallon cans in a small space, while glasses take up a large amount of space.

3. A larger range of flavor is permitted since fruits may be combined that ripen at widely differing seasons. Any juice left over from canning and preserving may be saved and used for jelly making.

4. Time is saved because one can make more jelly in a day if but one of the operations required in jelly making is needed. In time of large crops much fruit juice may be canned and may later serve to tide over a season in which there may be a crop failure.

**Orange Peel Used in Jelly Making.** Before leaving the question of jelly making, attention should be called to one source of pectin of which the housewife is not usually aware. It has long been customary to use as a basis for jellies the juice of a fruit such as apple, which, though not especially well flavored, contains all the other essentials for making good jelly, and add to it varying amounts of other fruits which are made to jelly with more difficulty, but which have an especially good flavor.

Miss Goldthwaite in the course of her experiments found out that the white inner peel of the orange and lemon is an abundant source of pectin. This fact accounts for the jelly-like character of orange marmalade and of the hand lotion made from the juice of the boiled-up lemon, glycerine and alcohol.

Orange and lemon peelings are a waste product in every home. If they were saved they might be used very effectively in jelly making. The yellow part contains the bitter principle and should be removed before boiling up the white to extract the pectin.

## PRESERVES, JAMS, MARMALADES

The essential differences between preserves, jams, marmalades, and butters is nowhere clearly defined.

**Preserves.** Preserves originally meant the cooking together of definite quantities of fruit and sugar, usually equal quantities, to the point where it would keep without being sealed air-tight. In this case the sugar is so concentrated that it prevents the growth of any organisms. In preserves we aim to keep as nearly as possible the original shape and appearance of the fruit. The cooking in the sugar solution makes the fruit appear clear. In preserves we can distinguish two essentially different parts, the fruit and the juice.

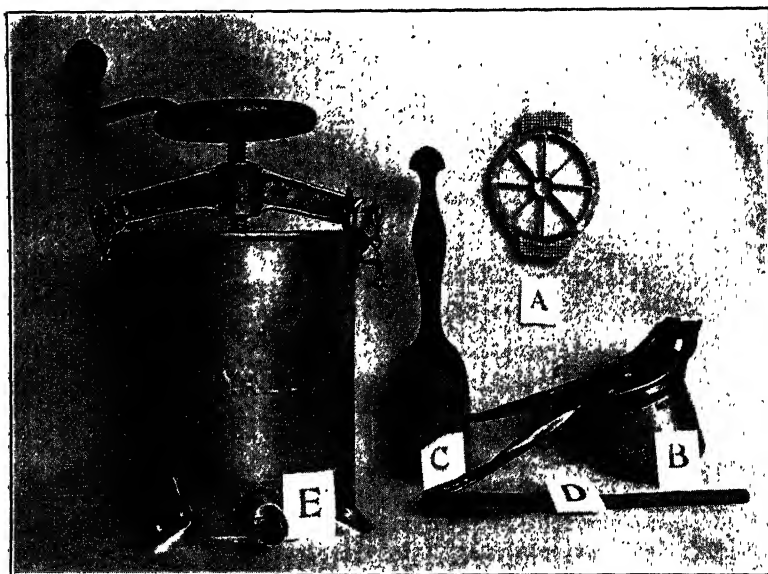
**Jams.** Jams differ from preserves in that the whole fruit is used. The fruit is crushed in the juice so as to produce a homogeneous mixture. As a rule only the small fruits of which the whole may be used are utilized in jam making.

**Butters.** Butters are more mixed and more smooth than jams. For this purpose we use fruits that contain a larger proportion of fleshy material. We also discard the seeds and skins.

**Marmalade.** Marmalade stands midway between jams and butters. Larger fruits are used for this purpose than are utilized in jam making.

Those fruits whose pulp will not produce the smooth consistency of a butter are used in marmalade making.

It is possible by changing the method of preparation to make both a butter and a marmalade from the same fruit, for example, the peach. If the peaches are cooked until soft before adding the sugar the consistency is usually that of a butter. On the other hand, if the sugar is added at the beginning of the operation and the pulp is preserved in small pieces rather than being cooked smooth, we can recognize two distinct portions, the juice, and small particles of preserved fruit, and the result is a marmalade.



#### HANDY UTENSILS TO BE USED IN PRESERVING FOODS

A, apple, slicer and cover; B, potato river; C, wooden masher; D, wooden spoon; E, large fruit press.

**Amount of Sugar.** In all of the above mixtures practically the same amounts of sugar are used. Formerly the proportion of equal weights of fruit and sugar was used. We now realize that better consistency and flavor is obtained with the use of less sugar. Three-fourths ( $\frac{3}{4}$ ) as much sugar, by weight, as fruit will be sufficient to keep it when cooked to the desired concentration.

Some recipes will be found which call for a smaller proportion of sugar. Such proportions do not make preserves in the true sense of the term, for in such cases there is not sufficient sugar to keep the fruit unless sealed air-tight.

Such variation in the amounts of sugar called for by various recipes, makes the line between canned and preserved fruits extremely narrow and variable. That is why it is difficult to judge the great variety of entries under the title of "Preserves" at the usual Fair Exhibit.

Preserves should, both from the meaning of the term and the usage which has grown up around it, be considered as containing enough sugar to keep the fruit were the jar left unsealed, and the fruit should retain its original shape as nearly as possible.

Preserves should be so sealed as to prevent them from absorbing moisture. If the preserves are left so that they absorb this moisture the proportion of sugar is so reduced that it cannot prevent the growth of any organisms that may get in.

**Principles Underlying Preparation.** As there are so many ways of preparing preserves and like products, it might be well to consider a few essential principles. When the aim is to retain the shape of the fruit, it should be cooked from the beginning in a sugar syrup as that has a tendency to harden the fruit and thus retain the shape.

In the case of a fruit which contains a large amount of fiber or when the fruit is to be mashed, it should be cooked until tender before the sugar is added. There is no need to do this in the case of soft fruits.

When our aim is to retain the shape of the fruit we should decrease the handling of the fruit as much as possible. The making of candied fruits as it is done commercially affords a good example of this. Here syrups of gradually increasing density are poured over the fruit, thus producing the "candied" effect, without a large amount of cooking.

In the candying process the fruit must be cooked in a sugar syrup, for a short time, as this cooking makes it possible for the fruit to absorb the sugar and thus prevents shrinkage. The fruit is then allowed to stand until the syrup thoroughly permeates it, usually two or three days. The syrup should then be drained off, cooked down, and poured over the fruit again. This is continued until the syrup, after standing over the fruit, is of the desired thickness, as the syrup tends to draw out the water from the fruit.

If the fruit is cooked along with the syrup, stirring is necessary, which results in broken fruit and the continued heating gives an undesirable color to the fruit.

**Sun Preserves.** The above principle is used in the making of sun preserves. Here the heat of the sun gradually concentrates the syrup. As no stirring is necessary shape is retained. The low heat is not sufficient to change the color. The fruit must be heated up with the syrup before putting in the sun. When this is not done the fruit will shrivel, because the very thick syrup will draw out the water from the fruit but will not be able to get into the fruit to take its place. The previous cooking makes it possible for the fruit to absorb the syrup.

**Conserve.** Conserve is a name frequently given to a kind of preserves made from a mixture of fruits, to which nuts are usually added.

### General Rules

Since it is desirable in all the above products to have a jelly-like rather than a candy consistency; all the rules observed in jelly making are to a less degree applicable here. Especially is it possible to produce a marmalade of more desirable consistency by the use of the pectin which may be cooked out of the white inside peel of the fruits usually employed in making marmalade. The addition of small amounts so obtained might materially improve the texture of other preserves without in any way changing the flavor. The test as to when the products are done should be the same as jelly, especially in the cases where there is any tendency to jell. Whenever the cooking is continued beyond the jelly temperature the mass usually is tough, and is more of a candy than a jelly.

The standards for each of these products can probably be held in mind most clearly by the use of a score card, which not only enumerates the different points to be kept in mind, but assigns a definite value to each. Score cards are included here.

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### SCORE CARDS

**Canned Goods.** In the canned product we should aim to have the fruit contain as near as possible its original shape and flavor. In the case of canned fruits the natural flavor of the fruit should not be hidden with too much sugar.

#### Score for Canned Fruit

Fruit—shape.....	15
color.....	15
flavor.....	30
Juice—flavor.....	15
clearness and consistency.....	15
Proportion of fruit to juice.....	10
	<hr/>
	100

#### Score for Canned Vegetables

Flavor of vegetable.....	35
Condition of vegetable.....	35
Proportion of vegetable to juice.....	20
General appearance.....	10
	<hr/>
	100

**Score for Jelly**

Color.....	10
Transparency.....	20
Taste.....	25
Consistency—hold shape, not flow.....	15
tender, will cut easily.....	15
firm, angles retain shape.....	5
No signs of crystallization.....	10

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 100
**Score for Preserves**

Fruit—shape.....	10
clearness and color.....	10
flavor.....	15
texture.....	10
Juice—clearness and color.....	10
flavor.....	15
consistency.....	10
proportion of juice.....	20

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 100
**Score for Jams**

Homogeneity (even distributing of pulp and juice and seed).....	30
Consistency.....	30
Flavor.....	30
Color.....	10

---

 100
**Score for Butters**

Smoothness.....	30
Consistency.....	30
Flavor.....	30
Color.....	10

---

 100
**Score for Marmalades**

Homogeneity.....	15
Consistency.....	25
Clearness.....	20
Flavor.....	25
Color.....	15

---

 100

## PICKLING

Other preservatives than sugar which may be used are salt, vinegar and the various kinds of spices. Typical foods which are preserved by means of these articles are mincemeat, fruit cake, spiced fruit, meats, and pickles. Pickle is the only one which we will consider in any detail. It is worth while to note in passing, however, that the preservative action of the different spices varies. The spices are usually added for flavor, rather than for any preservative action they may exert. It is of interest to note to what extent one can depend upon the preservative action in the various spices.

(Note. Conrad Hoffman and Alice Evans in "The Preservative Action of Spices", *Journal of Home Economics*, volume 3, page 452 Vinegar is valuable as a preservative. Ginger, black pepper, and cayenne do not prevent the growth of organisms. Cinnamon, cloves, and mustard are valuable preservatives, while nutmeg and allspice delay growth. Cinnamon, cloves, and mustard are about equal in efficiency. Cinnamon and mustard are especially valuable for they are still palatable when used in proportion large enough to prevent all growths. Cloves in the proportion that would prevent growth are unpalatable. In smaller amounts cloves exert a retarding action.)

In pickles we make use of the preservative action of vinegar and spices. The use of salt in pickle-making is to draw out the water. The necessity for this is brought out very clearly by reference to the composition of the vegetables commonly used in pickle-making.

### Percentage of Water in Some Common Vegetables

	Pcr cent Water
Cabbage.....	91.5
Beans (green).....	89.2
Beets.....	87.5
Cauliflower.....	92.3
Cucumber.....	95.4
Onions.....	87.6
Tomatoes.....	94.3

The brine most frequently used is made by dissolving one measure of salt in eight measures of water. In those pickles in which the vegetable is finely divided a brine is not used, but alternate layers of salt and vegetable are packed down in jars, the last layer being salt. This is allowed to stand for a few hours.

If the vegetables were used without previous treatment, the resulting liquid would be so dilute as to have no preservative action. When the vegetables are soaked in brine, the action of the strong salt solution is to draw the water out. The water can be separated from the vegetables by

squeezing the pickle in cloths. Where too much salt is left in the pickle, it should be removed by washing with vinegar. Washing with water would only defeat our purpose, as it would put back in the vegetable the water we had taken so much trouble to remove. The water might, of course, be cooked off, but this would so soften the vegetables as to render them unfit for use as pickle. Crispness is a desirable attribute of all pickles. After the vinegar and seasoning have been added the whole mass should be heated or the hot vinegar may be poured over the pickle. In the latter case the vinegar should be drained off, reheated, and again poured over the pickle for three successive days. This treatment with the hot vinegar causes the vegetable to absorb the vinegar and the seasonings. A large number of recipes call for alum, as it makes the pickle move crisp and firm. Since in the opinion of experts, alum is a most undesirable addition to our foods, its use in this case is to be discouraged.

There are three main classes of pickles: sweet fruit or vegetable pickles; sour pickles, which include mustard pickles; and that large variety of pickles in which the material is chopped finely.

Although many varied recipes may be found for each class, one formula can be used to make a large variety. A large number of recipes that seem very different may be reduced to the following formulae.

#### Formula for Sweet Pickles

2 lbs. of prepared fruit or vegetables  
sugar  
vinegar

1 oz. of mixed spices.

The kind of fruit or vegetables and the way it is prepared determines the kind of pickle which results. For example:

**Sweet Peach Pickle.** Scald the peach to remove the skin. If the peach is hard, cook until tender (steaming is the best method). Prepare the vinegar according to the above formula and cook the peach in it until it is transparent.

**Sweet Pear Pickle.** Peel the pear and proceed as above.

**Crabapple Pickles.** Crabapples need not be peeled. If they are pricked the spiced vinegar can find entrance and flavors the pickle. The pickle is made in the same way as the peach or pear.

**Sliced Tomato Pickles.** Green tomatoes may be sliced and a sweet pickle made according to the above rules. However most people prefer the green tomatoes when sliced and mixed with sliced onions and a sour spiced vinegar added.

**Watermelon rind** makes a very good pickle. Trim off all of the red and the green parts, cut in suitable pieces, and put the rind to cook in salted water ( $\frac{1}{2}$  tsp. to one quart). Cook until it becomes translucent. Drain water off. Cook for one-half hour in sweetened vinegar, using 3 pints of



brown sugar to one quart of vinegar. One cup of mixed spices may be put in a cheesecloth bag and added to the vinegar if the spiced flavor is desired.

### Mustard Pickles

- $\frac{1}{4}$  to  $\frac{1}{2}$  cup of sugar
- 1 oz. ground mustard
- 2 tablespoons of flour

Mix and stir into one pint of hot vinegar and cook until it thickens. Tumeric may be added to give color. Pour while hot over one quart of mixed vegetables from which the water has been extracted by the brine treatment.

Reference, Anna Barrows, "Course in the Use and Preparation of Vegetable Foods", United States Department of Agriculture, Office of Experiment Station, Bulletin No. 245, p. 89.

### Spiced Vinegar for Sour Pickles

- 1 gal. of vinegar
- 4 red peppers
- 2 sticks of cinnamon
- 2 tablespoons of allspice berries
- 2 tablespoons of cloves

If the spices are tied up in cheesecloth bags the amount of flavor can be better regulated, as they can be easily removed at any time. This also improves the appearance of the pickle.

Reference, F. M. Farmer, Boston Cooking School Cook-book, p. 584.

### Chili Sauce

Take two quarts of ripe tomatoes, four large onions, four peppers, chop them fine, then add four cups of vinegar.

- 3 tablespoons of brown sugar
- 2 tablespoons of salt
- 2 teaspoons of cloves
- 2 teaspoons of cinnamon
- 2 teaspoons of ginger
- 1 teaspoon of allspice
- 2 teaspoons of nutmeg

Boil together until quite thick, then bottle for use.

### Pickle Lily

- One peck of green tomatoes
- Two quarts of onions
- Two or three green or red peppers

Chop all fine, Separate and mix, adding two cups of salt. Let stand over night and in the morning drain well. Add half pound of mus-

tard seed and one cup of grated horseradish. Put in a cloth bag two tablespoons of ground allspice, two tablespoons of ground cloves, let boil with three quarts of vinegar, pour over all. Put away in Mason jars. Celery can be used in place of onions and cabbage added with all.

**Chopped Pickles.** These may be made in numberless mixtures, the materials most used are tomatoes, both green and ripe, cabbage, onions, celery, cauliflower. These may be cooked with the vinegar and spices as in the making of Chili Sauce or they may be left raw as in the case of Pickle Lily. The kinds and amounts in the various mixtures is a matter of personal preference.

### Scores for Pickles

In pickles the preservation is effected by the use of vinegar and spice. This means the strength of the vinegar must be sufficient to exert a preservative action and that it must be sufficient in amount to cover the pickled material. Any sign of spoiling ought to disqualify the sample of pickle.

### Score for Plain Vegetable Pickles

These are judged under three heads (1) sweet, (2) sour, (3) dill. The same score being used in each case.

#### Score

Flavor.....	30
Texture—firm not tough.....	20
not soft or flabby.....	30
Color.....	10
Proportion of pickle to liquid.....	5
General appearance.....	5
	<hr/>
	100

### Mixed Vegetable Pickles

Choice and proportion of materials .....	20
Consistency and color of fluid.....	10
Flavor.....	30
Texture of vegetable material.....	30
Color.....	5
General appearance.....	5
	<hr/>
	100

**Score for Relishes**

In this class is included all the finely ground pickles.

Choice and proportion of materials.....	20
Size and uniformity of pieces.....	10
Flavor.....	40
Texture of material.....	20
Color.....	5
General appearance.....	5
	<hr/>
	100

**Score for Sweet Fruit Pickles**

A sweet fruit pickle has two distinct parts, the fruit and the juice. The aim should be to retain as much as possible of the flavor in the fruit. The only function of the juice is to serve as a flavoring medium and source of flavor for the pickled fruit.

Texture of fruit.....	25
Flavor.....	40
Appearance of fruit.....	10
Clearness of syrup (Cloudiness indicates loss of substance from the fruit).....	10
Consistency of syrup..	10
General appearance.....	5
	<hr/>
	100

# THE UNIVERSITY OF MISSOURI BULLETIN

VOLUME 15    NUMBER 23

EXTENSION SERIES 7

EDITED BY C. H. WILLIAMS

## CARE OF FREE TEXT BOOKS

BY

H. O. SEVERANCE



ISSUED THREE TIMES MONTHLY;  
ENTERED AT THE POSTOFFICE,  
COLUMBIA, MO., AS SECOND CLASS  
MATTER. . . . .

UNIVERSITY OF MISSOURI  
COLUMBIA, MISSOURI  
August, 1914

# Care of Free Text Books

The University of Missouri is anxious to be of assistance to the people of the state in every way possible. As a large number of city, town, and rural schools have recently adopted free textbooks, the need of a brief statement of the best methods of keeping record of books loaned to pupils has become apparent. Experience has shown that in schools in which records of books are not kept, the loss through carelessness amounts to far more than the keeping of the records would have cost. Accordingly, in the hope of being of service to schools that have adopted the new system, the Extension Division of the University has issued the following leaflet, prepared by Henry O. Severance, Librarian of the University.

There are two methods of caring for free textbooks either one of which is workable—the book method and the card method. The use of cards for records in schools, libraries, and business offices has become quite general. But there are many people who find the use of the book for accounts still satisfactory.

**Card Method**—Provide white three-ply<sup>1</sup>/<sub>2</sub> Bristol<sup>™</sup> cards 3 inches by 5 inches which cost about 15 cents a hundred and can be secured through local book stores. Schools issuing a large number of textbooks should provide a filing tray or box, the size depending upon the number of cards to be handled. In ordering cards, buy at least three times as many cards as there are books. If there are 100 books, purchase 300 cards, which will provide for the immediate need and furnish a few in excess for future needs. If the school should have a hundred books to be issued, a small filing box or tray of one drawer made of wood, or a black Japanned tin tray should be secured for the cards. The tin tray has covers. A paste-board box or chalk box would answer the purpose. If a school should have 500 books to handle, a two-drawer card filing case should be secured. These may be purchased through local book stores. The Japanned tin tray, the small tray or box, would each cost about \$1. The two-drawer case would cost about \$4.

When the books are received at the school the teacher should make cards like No. 1 (See illustration) for the stock, one for each kind of book, showing the number of copies and the date of receipt. These cards should be kept for the permanent record and for information regarding copies. Make entries on the card, as copy 2 worn out Dec. 1, 1913, copy 4 mutilated or lost, as the case may be.

Next open the front cover of each book and put the copy number on the inside near the top, in ink, as copy 1, copy 2, copy 3, and so forth, numbering the copies consecutively. Then make an individual card for every copy of the book, giving the title and the copy number of the book. See illustration card No. 2. Insert the cards between the leaves of the books. In the larger schools it would be well to paste a manila slip on the inside cover of the book, tipping the upper corners and the lower edge to the cover with paste. The slip should be  $3\frac{1}{4}$  inches by  $5\frac{1}{2}$  inches. It would serve as a pocket to hold the card when the book is on the shelf.

When the book is loaned to the pupil, he should sign the card. The teacher can enter the date of the loan on the card. When the book is returned the teacher should enter the date on the loan card and put the

**Fifth reader**

10 copies received 10—1—13

Copy 2 worn out 12—1—13

Copy 3 lost 12—1—13

**Form No. 1. Record of stock. (Full card should be 3 by 5 inches.)**

**Fifth reader. Copy 1**

James Wells. Sept. 1, 1913

Returned Feb. 1, 1914

John Abel. Feb. 2, 1914

**Form No. 2. Loan card. (Full card should be 3 by 5 inches.)**

**Wells, James**

Fifth reader. Sept. 1, 1913  
Returned Feb. 1, 1914.

Higher Arith. Sept. 1, 1913

U. S. History. Sept. 1, 1913.

**Form No. 3. Pupil record card. (Full card should be 3 by 5 inches.)**

card in the book, and shelve the book. The one card will serve for a number of readers. Notes can be made on the card showing the condition of the book at any time. The signatures will indicate the number of times the book has circulated and who had it. The cards can be filed alphabetically by the title of the books, and under those titles alphabetically by the names of the pupils. If the number of cards is small they can be tied together and kept in the teacher's desk. These cards will show at a glance the location of all copies of the several textbooks.

Some teachers may prefer to ascertain quickly the number and the titles of all books issued to a certain student. In such a case the teacher can make the record shown by card No. 3 in addition to card No. 2, or in place of it.

By the use of cards, the records can be kept accurately and conveniently and time will be saved over the book system.

**Book Method**—A record book with good quality of paper so that it would take ink, would be satisfactory. An unruled page is preferable. If the page is ruled, a few perpendicular lines would divide the page as desired. The teacher, then, can rule a number of pages in the front, perhaps a third of the book, like form No. 4 on which to keep a record of the books received. The name and the number of copies, the cost of each copy, the date the books are received and the bookseller from whom the books have been purchased should be recorded. Occasionally a book is imperfect. The bookseller will take the defective copy and give you a perfect one. It is therefore desirable to know from whom the books are purchased.

When the books are issued to pupils they should be charged to them in the record book. Their names should be arranged alphabetically. The books should be charged as indicated by form No. 5. In the column under remarks, notes can be made regarding the physical condition of the book when it is returned. In the same column, a record of the loss and payment for books may be made. The loss should be recorded in form No. 4 also, so that you can ascertain the number of copies in stock by glancing at the record. In using the Book Method, the copy numbers should be written in the books in the same way as that described under Card Method.

**Book Cases**—Book cases should be constructed in which the textbooks can be stored while they are not in use. In the one-room school-house, cases may be constructed by a local carpenter. The case should be made of inch lumber eight inches wide. Each case should consist of two sides, a base about three inches high, six shelves nine inches apart and three feet long, a top three and a half feet long so that it will project over the sides of the case two inches on each side. The wall of the room would form the back and a door with a lock on it would form the front. A glass door is to be preferred, as the books seen through the glass have more beauty than a rough wooden door shutting them from view. Such a case would hold about two hundred textbooks. Multiples of this case can easily be made by the carpenter. In schools where a separate room is given up to the textbooks, ordinary wall book stacks may be constructed without doors.

Author	Title	Copy No.	Cost	Date rec'd	From whom received
Olney	Higher Arithmetic	1	1.50	9-1-13	A. C. McClurg & Co.
		2			
		3			
	Lost by John Doe 5-1-14 paid for.	4			

Form No. 4

Wells, James

Author	Title	Copy	Loaned	Ret.	Remarks
Olney	Higher Arithmetic	2	9-1-14	2-1-14	Badly soiled
Elson	U. S. History	3	9-1-14	Lost	Paid for 5-1-14

Form No. 5

# THE UNIVERSITY OF MISSOURI BULLETIN

VOLUME 15    NUMBER 28

EXTENSION SERIES 9

EDITED BY C. H. WILLIAMS

## ABNORMAL AND DEFECTIVE CHILDREN

BY

W. H. PYLE

*Assistant Professor of Educational Psychology*



Issued Three Times Monthly; Entered at the Post-office, Columbia, Missouri, as Second Class Matter

UNIVERSITY OF MISSOURI

COLUMBIA, MISSOURI

October, 1914





## Abnormal and Defective Children.

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It is the earnest wish of the University of Missouri to be of aid in every way possible to the people of the state. In pursuance of this desire the Extension Division of the University has issued this bulletin upon the care and training of abnormal and defective children.

**Scientific Study of Children.**—For some time we have been used to the application of science to the solution of the farmer's problems. Through the College of Agriculture and other agencies, our state spends thousands of dollars annually in experimental investigations in trying to find better ways of meeting the problems of the farm, and in spreading the results of these investigations among those who can profit from the information. The farmer can get expert assistance and knowledge in dealing with his cholera hogs, the chinchbugs in his wheat or his infested orchard. He can get expert advice concerning soils and fertilizers and on all other subjects related to agriculture.

But we are not yet used to the idea of applying scientific knowledge to the problem of rearing children, in spite of the fact that children are very much like fruit trees and pigs and chickens, in that they need constant care and oversight during the period of growth. Among children, we find good stock and poor stock. When a child gets sick, there is a cause for it. If a child's development is retarded, there is a cause for that too. A child's body and mind grow and develop and function according to definite laws, just as is the case with all other kinds of living things. If a child's vision or hearing is defective, this has an effect on the child's life. If a child is not properly fed or clothed, or any vital organ is out of order, the child suffers in consequence. A person's mind is intimately related to his body, and generally speaking, whatever affects the body, affects the mind. If the body is fast or slow in development, so usually is the mind. Heredity is a great factor in the human race just as it is with lower animals, and with plants. We do not expect to raise apples on peach trees nor beans on melon vines. With domestic animals, we know that we get different results from different breeds. We must expect the same factor to work with our children. Some belong to good, strong, healthy stock and others to poor, weak and unstable stock. All our various mental and physical characteristics are, beyond doubt, transmitted by inheritance. Now, since all these things are true—since everything that happens in the development of a child is due to some cause—we must use every means known to man of guiding and directing child-development, so that each child

may come to maturity with the best possible equipment for its life-work having suffered no drawback from a cause that could have been removed.

The School of Education in our State University should fill the same place in the matter of rearing and educating children that the the state College of Agriculture does in the work of farming. Experience proves that the state is justified in maintaining experiment stations and schools of agriculture. It will also be justified in spending even greater sums of money in finding out what is best to do for our children, and in spreading this knowledge among the teachers and parents of the state.

The purpose of this bulletin is to set forth the possibilities in one particular field—the proper education and treatment of abnormal and defective children.

**Subnormal or Feeble-minded Children.**—We are all different. Just as no two people are exactly alike physically, so no two people are just alike mentally. Some of us have traits that others lack. Some of us have traits developed to a higher degree than do others. Some of us have good memories, others have very poor memories. Some of us are capable of a high power of attention or concentration; others are scatterbrained and cannot apply themselves long at a time. Now, if from infancy one lacks some trait or traits of social importance, he is considered feeble-minded. Feeble-mindedness usually involves all the higher mental powers, but it is not always so, for it sometimes happens that a person has some trait unusually developed, as memory, for example, while in all others respects his mind is feeble. The feeble-minded person is usually incapable of concentrated attention or of logical reasoning and is a slow learner. Most specialists in this field look upon feeble-mindedness as a matter of arrested development. The child stops in its development at an early stage of growth. An adult person, for example, might have a mind much like that of a six-year-old child. This retarded development may be caused by some accident or disease, but in about two-thirds of the cases it is due to heredity. In the latter case, the child belongs to weak or poor stock mentally, and inherits the mental defect just as it inherits its hair-color or stature.

Careful studies indicate that in this country there are about four feeble-minded children in a hundred. One child in two hundred is a low grade imbecile or idiot. If this estimate of the number of feeble-minded holds good in Missouri, we have in the state 38,260 feeble-minded children between the ages of six and twenty-one. If we exclude the lowest grades, there are left 33,477, that are likely to be sent to the public schools. In the feeble-minded institute at Lincoln, Illinois, it was found that a large per cent of the inmates had been in the public

schools. Doubtless nearly all of the higher grade imbeciles are sent to the schools and many of the lower grade imbeciles. Therefore the problem of dealing with feeble-mindedness is no small matter for our public schools. Taking the estimates above and allowing fifteen pupils to a class, there are in the state enough feeble-minded children for 2231 teachers.

**Importance of Early Diagnosis and Proper Education.**—Although only four per cent of the population are feeble-minded, 40 per cent of the criminals, we are told by the criminologist, are recruited from this class. The writer made a psychological study of the girls in the state Industrial Home at Chillicothe and found that about two-thirds of the girls were feeble-minded. It is therefore important that the feeble-minded child be discovered as soon as possible in order that the proper treatment and education may be provided. The child of low mentality cannot learn the ordinary school studies. Such a child gets along poorly in school and consequently soon comes to dislike school. Truancy is usually the result. Truancy, in these cases, usually leads to crime. Therefore, as soon as it can be discovered that a child has a serious mental defect, it should be taken out of the ordinary school and be given the kind of education suited to it. This should be done for the good of the child itself as well as for the good of the rest of the pupils. There will be found, on the average, one or two feeble-minded children to a room. These children cannot do the ordinary work of the school and often give the teacher as much trouble as all the other children together. This is not right. The public school teacher should give her time to the normal children. On the other hand, the defective and subnormal child has its rights. When the state undertakes universal education, compelling attendance at school, it assumes the obligation of making it possible for each child to learn, and of giving to each child the kind and amount of training that each is capable of receiving. We must get hold of the unfortunate child early in order that we may not waste its life in fruitless endeavor and before the child has started on a life of crime.

**The Diagnosis of Mental Defects.**—The accurate diagnosis of mental defects and disease is a matter for the expert just as is the case with physical defects and disease. Of course continued failure to do the work of the school is an indication of feeble-mindedness, if no other cause for such failure can be discovered. There is usually no trouble in discovering the lower grades of imbecility. But the higher grades, particularly the highest grade known as morons, are difficult to determine and an accurate diagnosis demands the service of an expert. The time will doubtless come when every community will have the services of an expert—the expert on child life, he may be called—a man trained in medicine, psychology and education, particularly in

the needs of growing children. Under his direction, the children will be examined and educated according to their needs. At the present time only the largest cities can command the services of such men, and in the smaller communities, we must get along for the present the best we can. Our superintendents and principals can qualify themselves to diagnose feeble-mindedness for practical purposes with fair success. The main criterion must be inability to do the ordinary work of the school, slowness in understanding and in executing commands, backwardness in meeting the needs and demands of ordinary life. There are now available mental tests that can be applied to all the children of the school. Norms of performance have been worked out for all ages and for both sexes. After the tests are given the results for each child can be compared with the norm for his or her age. It will be evident at once whether the child is above or below the average. If a child is several years below the norms for his age in all or most of the tests, he is probably of inferior mentality. But after the group tests have been given to all the pupils, those that show the greatest retardation of development, particularly if the school work corroborates the findings of the mental tests, should be given special, individual examination. For this purpose, the Binet-Simon tests can be used. These tests enable one to determine the mental age of a child, and have proved of great service to those who have had to deal with subnormal children. The tests are very simple. Though an expert psychologist is required to interpret the results properly, a wise superintendent with a knowledge of psychology can by practice acquire enough skill with the tests to make them of much service to him when considered in connection with other criteria. At the end of this bulletin will be found a list of books that will assist in mental diagnosis.

**Sensory and Other Defects.**—Often a child is retarded in school work not because it is feeble-minded, but because it cannot see well or cannot hear well. Sometimes defective teeth, adenoids and other diseases retard development and prevent school progress. Therefore every school should have medical inspection, and mental and physical examinations annually. The sight and hearing of every child should be examined at least once a year. Every child found to be suffering from poor vision or defective hearing should be sent to a physician for careful examination. With just a little bit of trouble any teacher can qualify herself to test sight and hearing and determine whether a child's school work is being hindered by low acuity in either. When such is the case, the child should be sent to a specialist if possible. No one but a competent and honest oculist should prescribe glasses for a child. Poor vision is a very serious bar to school progress. Probably two-fifths of all school children could have their vision much improved

by glasses. There are not more than half as many cases of serious ear defects, but defective hearing is a most serious hindrance to a child and should be treated as soon as discovered. There is considerable prejudice against the wearing of glasses. Teachers should overcome this by explaining to parents the nature of visual defects and the principle of their correction by glasses. It is a teacher's duty to ascertain the visual and auditory acuity of every child in her charge, and not only to make proper recommendations where defects are found, but to advise and instruct the parents concerning the importance of attending to such matters. Causes of retardation may also be looked for in adenoid growths and defective teeth, as mentioned above; also in poor nourishment, insufficient exercise, insufficient sleep and sometimes in defective speech. There are various forms of word-blindness as well as color-blindness that are sometimes found.

There is no use to pay out enormous sums of money to educate children and then waste a considerable portion of it trying to teach children who cannot hear, or cannot see or who cannot learn because of some cause that could be removed.

**The Education of the Feeble-minded.**—The feeble-minded child, lacking the higher mental powers or having them in but feeble degree, can make little progress in the ordinary school studies that have in them so much that is abstract and symbolic. Reading and writing can be learned only by the highest types of mental defectives, and only poorly by them. The proper education for the feeble-minded child is motor and manual. They should have a great deal of play and should work much with their hands. Manual and industrial work is infinite in variety and complexity and can therefore be adapted to all grades and degrees of development.

In cities with a school population of five hundred to a thousand and upward there will be found a sufficient number of subnormal children for one teacher or more. Fifteen subnormal children make a class large enough for one teacher. Children three years or more retarded in their mental development should be taken out of the ordinary school and put into a special class. This should be called the "ungraded class." In charge of this class should be put the best teacher available—one successful with little children, particularly in dealing with individual children. Each child in this ungraded class will constitute a problem for the teacher. She is, by proper treatment and care, to lead each to the highest point of development possible. Some children whose development is retarded from temporary causes, under the good treatment received in this special class may be returned later to the proper grade in the regular school. Others, as the years go by will be found to be of such low mentality that they must be sent to some institution for the feeble-minded, where

they must spend their whole life, not being allowed to marry and reproduce their kind. This will usually be the case with the type known as moral imbecile.

The curriculum for the special class should consist of plays and games of great variety, well planned and graded, and every kind of hand work and construction. A really feeble-minded child is one for his whole life, and the sooner we recognize this fact and give up the hope of making a genius out of him, the better it will be for him. We must try to fit these children to live out their lives in very humble capacities. The special class will be the place where the future possibilities for each child will be determined, some to live a free, independent life in society, others to live out their lives in segregated communities. It is doubtful whether any of those whose defect is clearly from inheritance, should be allowed to marry.

The teacher of special classes must, in large measure, work out her own curriculum and methods. Experience will give her wisdom and skill.

In smaller towns and in rural communities where there is not enough subnormal children to justify the employment of a special teacher for them, it is still advisable to make an accurate study to determine who is feeble-minded. Although they cannot have a special class, they should be treated differently from the other children, and given the right kind of work as far as the teacher is able to provide it for them. They should be allowed more freedom and given more time for play, and the teacher need not worry about their progress in the ordinary school studies or their promotion.

The work and play here outlined for this type of children will make them happy and fit them to live such lives as nature has made possible.

**A Clinical Room for Diagnosis.**—Connected with the superintendent's office there should be a room fitted up with apparatus for the mental and physical examination of the pupils. For the present, the examinations can be carried out by the superintendent and the special teachers. For about \$150 such a room can be fairly well equipped. And the good that would come from only the careful visual and auditory tests would abundantly justify the expenditure, to say nothing of the good from the mental examinations. The apparatus and other equipment should consist of charts and frames for testing vision, a Pilling-McCallie audiometer for testing hearing, apparatus for testing muscular speed and strength and muscular steadiness, for measuring height and weight and for determining the lung capacity, for testing for color-blindness, for determining the ability of distinguishing differences in pitch. Besides these, there should be various pieces of apparatus, and blanks and printed forms for mental examination.

**The University Will Help.**—For three years the university has offered a course on the Abnormal Child for the purpose of fitting teachers for the work of detecting feeble-mindedness and for teaching such children. This course will be continued and extended. As occasion demands, the university will plan special courses in medicine and psychology that will aim at fitting teachers for this special kind of work. In addition to this work of preparing teachers, the university through the Extension Division will undertake to help any school in the work of diagnosis and in organizing the work of this special class. When it is desired the department of educational psychology will, if possible, send a representative to give personal assistance. In such a case, no charge will be made except the actual expenses of the trip. Any help that can be given by correspondence will always be promptly and freely given. Requests for personal assistance should be sent to the Secretary of the Extension Division; other correspondence concerning abnormal children may be addressed to the writer of this bulletin.

**Supernormal Children.**—While the main purpose of this bulletin is to set forth the educational needs of the subnormal and defective, a word must be said in the interest of the supernormal child. The argument for the segregation and separate education of the subnormal child is partly that of economy. The state will save money by giving the defective child the kind of education that he needs. The child will thereby be fitted for the only kind of life that it is possible for him to live, and in many cases, saved from a life of crime. It will be much cheaper for the state to spend money for the proper education of the defectives than to spend it maintaining courts, jails and penitentiaries. No one is interested in the subnormals because he thinks geniuses can be made of them. Our interest in the supernormal child, however, is for an entirely different reason. While there are about four per cent of subnormal children, there is about the same number of children distinctly supernormal or superior. They are capable of a great deal more intellectual work and of a higher order than their fellows of the same age. Now it is of the greatest importance to society that these children of superior ability advance as fast and as far as their best interests demand. The child of superior mind can usually make his progress through the grades much faster than the normal child. He should either be allowed to do this or else given much more work and more difficult work than is given to the others of the same age. The important thing is that each child be doing just the work that his development at the time demands and be working with others of the same mental age. It is to the interest both of society and the individual that the child of superior mind be given the most favorable opportunity for development, for on these few superior minds the progress of civilization depends.



Some children are "all around superior," while others are gifted in some special field, as music, painting, invention, etc. When the latter is clearly the case, the child should be given the ordinary instruction of the public schools and also allowed to have outside of school, the special training that his talent demands. Briefly, we plead for the conservation of human energy, doing for every child that which is best for it and doing it at the proper time.

### LIST OF BOOKS

In dealing with the abnormal child, much help can be had from books. The following should be available to those who undertake to make special provision for abnormal children. They may be obtained from the publishers or from the University Co-operative Store, Columbia.

- W. S. CORNELL—Health and Medical Inspection of School Children, F. A. Davis Company, Philadelphia, \$3.00.
- H. H. GODDARD—The Binet-Simon Tests, published by the Training School, Vineland, N. J., fifteen cents. This pamphlet gives the tests as used by Goddard.
- A. HOLMES—The Conservation of the Child, J. B. Lippincott Co., Philadelphia, \$1.25.
- E. B. HUEY—Backward and Feeble-minded Children, Warwick and York, Inc., Baltimore, \$1.40.
- G. L. NOYES—Relation of Sight and Hearing to Early School Life, University of Missouri Bulletin, Medical Series, No. 5. This pamphlet is free and should be in the hands of every teacher in the state.
- W. H. PYLE—The Examination of School Children, The Macmillan Co., New York and Chicago, fifty cents. This manual gives directions for mental and physical tests, with norms for the various school ages and both sexes.
- C. H. TOWN—Binet's Method of Measuring the Development of the Intelligence of Young Children, The Courier Co., Lincoln, Illinois, \$1.00.
- J. H. VAN SICKLE—Provision for Exceptional Children in Public Schools, Bulletin, 1911, No. 14, United States Bureau of Education, free.
- J. E. W. WALLIN—The Mental Health of the School Child, Yale University Press, New Haven, \$2.00.
- G. M. WHIPPLE—Manual of Mental and Physical Tests, Warwick and York, Inc., two volumes, \$3.75. This large work is a comprehensive treatment of the subject of tests.
- L. WITMER—The Special Class for Backward Children, The Psychological Clinic Press, Philadelphia, \$1.50.

Two magazines, devoted to the interests of the abnormal child, will be helpful: The Psychological Clinic, published by the Psychological Clinic Press, Philadelphia, \$1.50; and the Training School, published at Vineland, N. J., \$1.00.

# THE UNIVERSITY OF MISSOURI BULLETIN

VOLUME 15    NUMBER 35

EXTENSION SERIES 11

EDITED BY C. H. WILLIAMS

## THE HOUSE FLY

BY

M. P. RAVENEL

*Professor of Bacteriology and Preventive Medicine*



Issued Three Times Monthly: Entered at the Post-office, Columbia, Missouri, as Second-Class Matter

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COLUMBIA, MISSOURI  
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50,000

## THE HOUSE FLY

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The house fly was formerly regarded simply as a pest, especially to bald-headed men. Within recent years we have realized that the house fly is a scavenger by nature and that its habits of life lead it to feed on all sorts of materials which may be infected with the germs of various diseases. It has been proved by experiments that it feeds on the sputum from people suffering from consumption and can then carry these germs for a longer or shorter time in its intestinal tract and on its feet. The same thing has been proved for several other diseases and especially troubles of the intestinal tract, such as diarrhea, dysentery, and typhoid fever. So strong is the proof regarding these diseases that Doctor Howard has proposed that the name be changed from "house fly" and it now be called the "typhoid fly."

The foot of the fly is covered with hairs and ends in a claw ideally constructed to carry germs and filth. Its lips and parts about the mouth are also most repulsive to look at when magnified, and they, too, are well constructed for carrying dirt. Proofs of the dangerous quality of the house fly and its part in carrying diseases could be multiplied, but they are beyond controversy at the present day and it will be more useful to study the fly's breeding habits than to go further into examples of its pernicious activities.

As a rule, two kinds of flies are found about the house. These are the ordinary house fly and the stable fly. The latter is slightly smaller and as a rule indistinguishable by one who has not made a special study of this insect. However it is not necessary to distinguish them as the stable fly has also fallen under suspicion as a carrier of disease.

The house fly lays eggs which are shaped somewhat like slender grains of wheat. They are much smaller, however, being only from .04 to .05 of an inch in length and .01 of an inch in thickness. They are deposited in masses which usually contain on the average 120 eggs. In ordinary weather they hatch in twenty-four hours, producing a maggot, which is .07 of an inch in length, tapering at one end and blunt at the other. These grow rapidly and become from a quarter of an inch to one-half inch in length. They change their skins three times within five to seven days. After the third change of skin, or molting, as it is called, the maggot goes into a resting stage, called a *pupa*, which is a small brown object rounded at the ends. This stage lasts from five to seven days, when the perfect fly emerges from it. The number of broods which a fly may produce varies from eight

to fourteen a season, according to the latitude, weather, etc. Heat and moisture are requisite. In twelve generations the progeny of a single female fly will be more than 14,067,792,000,000,000, provided they all live.

The fly prefers fresh horse manure for the laying of its eggs, but if horse manure cannot be found, then filth of almost any sort, such as cow manure, human excrement, decaying vegetables or meats, garbage, or even soiled and moist rags and paper.

Various methods have been proposed to rid us of this pest. The slogan of "Swat the Fly" has gone over the country. Fly papers, some sticky and some poisonous, and various sorts of fly poisons are sold in enormous quantities by our drug stores. All of these have their uses and no doubt produce some diminution in the fly crop, but the only rational way and sure way is to prevent breeding. How shall this be done?

*The first requisite is to clean up. Do not allow horse manure, stable manure, or filth of any sort to stand around the yards or stables. Keep all outhouses in clean and sanitary condition. Keep the garbage can clean and covered always. Horse manure should be taken out of the stables at least twice a week and either thoroughly dried or thoroughly buried. If spread in thin layers, where it becomes dry rapidly, the eggs cannot hatch nor the maggots mature. If the manure cannot be dried, it must be stored. This means that a closely covered fly proof bin should be provided for it. Such a bin, made of wooden planks, can be constructed in a few hours. For taking proper care of the manure only a little labor is necessary and in addition to escaping the pest of the flies the stables are made much more comfortable quarters for the farm stock.*

The United States Department of Agriculture has recently published the results of experiments to prevent the breeding of flies and states that the sprinkling of a small amount of borax in layers in manure will entirely prevent it.

The following are directions for the use of borax: For every eight bushels (or ten cubic feet) of manure sprinkle with a flour sifter or any fine sieve .62 pounds (slightly more than half a pound) of borax, particularly around the outer edges of the manure heap, and over this sprinkle with a watering can or otherwise two to three gallons of water. The borax coming into contact with the eggs prevents their hatching. Maggots gather at the outer edges of the pile. Consequently most of the borax should be applied there.

Experiments show that no injurious action on most crops will follow the application of manure so treated, but its cumulative effects have not been determined and its action on all crops has not been studied. It is recommended, therefore, that not more than fifteen tons per acre of such treated manure should be applied to a field.

Until the wished-for object of destruction of flies is accomplished, it is necessary to take precaution against spread of disease by flies. The two chief measures required for this are (1) *to disinfect the discharges*, especially those of patients suffering from intestinal diseases and (2) *to keep the house well screened*. In other words the fly must be prevented from feeding on discharges which may contain disease germs and secondly flies which may have so fed must be prevented from reaching people who are well. Next to keeping the premises cleaned up, the most important thing both for people in the town and in the country is to keep the house well screened. This costs only a small amount and the saving in doctor's bills in a single summer will often pay many times over the small expense involved. In addition to this the comfort of being rid of the fly is worth many times the trouble and expense involved. The chief necessity is in so fitting the screens that no openings will be left for the flies to enter. In case some do get in they should be killed at once with a fly "swatter." It is especially important to kill all flies that appear early in the season. One fly killed in April means millions less in August.

The editor of this bulletin visited one day last year in the State of Missouri a home in which one of the members of the family was very sick with typhoid fever. No precaution whatever had been taken to exclude the flies and they were swarming about the patient by hundreds. One person was kept continually busy fanning them away, and if for a moment the vigilance was relaxed, the flies settled down on the patient in a swarm. No prophet was needed to predict that other members of the family would be almost certain to be attacked by the same disease. The expenditure of a few dollars for screens would not only have contributed a great deal to the comfort of the patient but would have greatly aided in preventing the spread of the disease. The message, which above all others, this bulletin ought to bring to country homes is "*screen your houses*."

The following extracts from a publication of the Indiana State Board of Health, give the history of the house fly by dates and make it easy to remember approximately how the different changes take place:

### JOURNAL OF A FEMALE HOUSE FLY

1. Thursday, November 2, 1911. Went into winter quarters.
2. April 20, 1912. Barely lived through the long, hard winter. Came out of winter quarters and laid my first batch of eggs—120 in number—in a manure heap.
3. April 21, 1912. My first 120 eggs have hatched.
4. April 22, 1912. Larvae have undergone first molt.
5. April 23, 1912. Larvae have undergone second molt.
6. April 26, 1912. Larvae transformed into pupae.

7. May 1, 1912. One hundred and twenty full grown flies, sixty of which are females.
8. May 3, 1912. Laid my second batch—120 eggs—this time in the filth of an uncared-for privy.
9. May 13, 1912. One hundred and twenty flies came from my second batch of eggs. Laid my third batch in a kind neighbor's garbage can.
10. May 20, 1912. The city has offered a prize to the school child who will kill the largest number of flies. The boy at the house where I live is killing flies right and left. And to think—*we have all been eating at the same table with him.*
11. May 21, 1912. Laid my fourth batch of eggs. Left alone and unhindered, by September 10, 1912, my descendants will number 5,598,720,000,000.

### FLY CATECHISM

1. Where is the Fly born? In manure and filth.
2. Where does the Fly live? In all kinds of filth and he carries filth on his feet and wings.
3. Where does the Fly go when he leaves the manure pile, the privy vault and the spittoon? He goes into the kitchen, the dining room, and the store.
4. What does the Fly do there? He walks on the bread, fruit and vegetables; he wipes his feet on the butter and he bathes in the milk.
5. Does the Fly visit patients sick with consumption, typhoid fever and cholera infantum? He does and he may call on you next, carrying the infection of these diseases.
6. What diseases does the Fly carry? Typhoid fever, consumption, diarrheal diseases, diphtheria, scarlet fever, and in fact any communicable disease.
7. How can the Fly be prevented? By destroying all the filth about your premises; screen the privy vault; cover the manure bin; burn all waste matter; destroy your garbage; screen your house.

**EITHER MAN MUST KILL THE FLY OR THE FLY WILL KILL MAN.**

**PREVENT THE FLY.**

# THE UNIVERSITY OF MISSOURI BULLETIN

VOLUME 16    NUMBER 23

EXTENSION SERIES 12

EDITED BY C. H. WILLIAMS

## CORRESPONDENCE COURSES    IN HIGH SCHOOL SUBJECTS

A NEW DEPARTURE FOR  
UNIVERSITY EXTENSION



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THE UNIVERSITY OF MISSOURI BULLE-  
TIN, EXTENSION SERIES; EDITED BY  
CHARLES H. WILLIAMS, SECRETARY OF  
UNIVERSITY EXTENSION; ENTERED AS  
SECOND-CLASS MATTER AT THE POST-  
OFFICE, COLUMBIA, MISSOURI  
12,000

# CORRESPONDENCE COURSES IN HIGH SCHOOL SUBJECTS

The University of Missouri thru the United States mail gives you a chance to work for high school credit if you are unable to attend a high school.

These courses are prepared and given by members of the University faculty. The instruction in each case represents a definite amount of work with credit equivalent to that of corresponding courses given in accredited schools.

**Who May Enroll.** Any one may enroll who has completed the first eight grades of the common school course, or their equivalent. However, students enrolled in a high school are not permitted to take these courses during the regular session. Neither are they permitted to take them during summer vacation without the consent of their superintendent or principal.

## PURPOSE OF THESE COURSES

**General Education.** To provide a high grade of instruction for persons who do not find it convenient to attend school.

**University Entrance.** To help persons who are desirous of entering the University, or other school, but are a few units short of the entrance requirements, to complete such requirements. Credit will be given for this work by the University just as for work in an accredited high school. Most other schools will give similar credit.

**Teachers' Certificates.** To enable teachers and those desiring to teach, without leaving their homes and while engaged in other work, to comply with those provisions of the school law which require as a prerequisite for examination for first and second grade county certificates after 1912, 1914, 1916, and 1918, one year, two years, three years, and four years respectively of high school work or its equivalent. This work will be recognized by county superintendents and by the State Department of Education as fulfilling this requirement.

To give teachers who are working for state certificates, while engaged in teaching or other work, an opportunity to prepare for examinations.

Grades made in these subjects do not count in lieu of examinations for state or county certificates, but the work is so thoro in character that it affords an excellent review for such examinations.

## PROCEDURE

Make up your mind to investigate this opportunity; then write to the Secretary of University Extension, University of Missouri, Columbia, Missouri, for an application blank. Fill out the blank fully with the information called for and return it. If your application is approved you will be notified and instructed to remit the required fee to the Secretary of University Extension. You will then be enrolled and lessons with instructions for study, methods of preparation, and directions for return will be sent you. The lessons should be returned to the Secretary of University Extension. They will be graded and sent back to you with such explanations, corrections, and suggestions as seem necessary. Questions, assignments for reading, and lists of books will be furnished thruout the course so that each student will have adequate guidance and assistance. Questions pertaining to the subject under study are at all times encouraged.

**The High School Unit.** One year's work in a high school usually consists of four subjects; for example, the first year's work might consist of ancient history, English, algebra, and physical geography. The student recites in each of these subjects five times per week, for at least thirty-six weeks. Each recitation must be at least forty minutes in length. One such subject, for example, ancient history, studied for at least thirty-six weeks is called a "unit." Thus, four units constitute a full year's work in the high school. Four years are necessary to complete a high school. Accordingly, in most high schools sixteen units (or in some cases fifteen units) are required for graduation. For entrance to the College of Arts and Science and the School of Engineering of the University of Missouri, fifteen units are required. Of these, three must be in English, one in mathematics, and two in foreign language. For entrance to the College of Agriculture fifteen units are required, three of which must be in English and one in mathematics. For entrance to the other divisions of the University, two years of work in the College of Arts and Science or its equivalent are required.

### Cost of Correspondence Courses.

One-half unit course .....	\$ 7.50
One-unit course .....	15.00
Two-unit course .....	30.00

**Time of Preparation.** Each unit of work by correspondence consists of about forty assignments with a minimum time of preparation

of eight to ten hours each. Two hours of study a day should enable the student to finish one unit in forty weeks. However, any subject may be pursued as rapidly as is consistent with good work. By working more than this amount a day, a unit may be finished in less time than forty weeks.

## TEXTBOOKS

The enrollment fees barely cover the actual expense of conducting the courses, hence they do not include textbooks. Texts may be ordered from the publishers, or from the University Co-Operative Store or the Missouri Store, Columbia, Missouri.

## COURSES OFFERED

**Grammar.** One unit. A course dealing with the principles of English grammar, including sentence analysis. Text, Kittredge and Farley, *Advanced Grammar*, 80 cents.

**Composition.** One unit. The student will be expected to develop during this course the ability to express himself coherently and correctly. He will be expected to master the forms of writing, spelling, punctuation, and sentence and paragraph structure. Texts, Woolley, *Handbook of Composition*, 75 cents; Woolley, *Exercises in Composition*, 60 cents; Palmer, *Self-Cultivation in English*, 10 cents.

**Literature.** One unit. The work of this course consists of the study of thirteen of the classics on the college entrance list, and of Tisdell, *Studies in Literature*, 90 cents.

**History of English Literature.** One unit. This course includes not only the reading of classics but in addition a rather complete study of the history and development of English literature. Texts, Tisdell, *Studies in Literature*, 90 cents; Newcomer and Andrew, *Twelve Centuries of English Poetry and Prose*, \$1.75; Greene, *Historical Chart of English Literature*, 25 cents; and Phelps, *Literary Map of England*, 10 cents.

(Not more than four units in English may be offered for entrance.)

**Elementary Algebra.** One unit. Elementary algebra, including the elementary operations on polynomials and fractions, the solution of single and simultaneous linear equations, simple factoring, simple powers and roots, and the solution of numerical quadratic equations. Text, Hedrick, *Algebra for Secondary Schools*, \$1.00.

**Complete Elements of Algebra.** One and one-half units. Complete elements of algebra, including the above, and in addition thoro

work on quadratic equations, complete work on radicals and fractional exponents, progressions, and logarithms. Text, Hedrick, *Algebra for Secondary Schools*, \$1.00.

**Plane Geometry.** One unit. The usual standard course. Text, Ford and Ammerman, *Plane Geometry*, 80 cents, or Ford and Ammerman, *Plane and Solid Geometry*, \$1.25.

**Solid Geometry.** One-half unit. The usual standard course. Text, Ford and Ammerman, *Solid Geometry*, 80 cents, or Ford and Ammerman, *Plane and Solid Geometry*, \$1.25.

**Trigonometry.** One-half unit. This course covers a half-year's work. It includes the elementary notions, logarithms, functions of obtuse angles, solution of right-angled triangles, and the methods essential for the solution of oblique triangles. Some familiarity with the formulas involving the functions of the angles is also desirable. Text, Kenyon and Ingold, *Trigonometry*, \$1.35.

**Ancient History.** One unit. The history of the Oriental, Greek, and Roman periods, as given in a standard high school. Texts, Westermann, *Ancient Nations*, \$1.40; Botsford, *Source Book of Ancient History*, \$1.30.

**Medieval and Modern History.** One unit. Text, Robinson, *European History*, \$1.60.

**English History.** One unit or one-half unit. The political and social history of the English people. Texts, Cheyney, *Short History of England*, \$1.40; Trenholme, *Outlines of English History*, 50 cents. A half unit will be given for work of a less advanced character.

**American History.** One unit or one-half unit. The history of the Colonial and United States periods. Text, Muzzey, *An American History*, \$1.50.

(A half unit in English or American history will be accepted for entrance only when accompanied by at least one unit in European history.)

**Civil Government.** One-half unit. A study of the chief organs of local, state, and national government, their relations to each other, and the important functions assigned to each group. Some attention will be given to their historical development. The text used will be Garner, *Government in the United States*, \$1.00. No credit will be given toward entrance unless the student offers at least one-half unit in American history.

**Beginner's Latin.** One unit. Texts, Roberts and Rolfe, *Essential Latin Lessons*, \$1.00; Greenough, D'Ooge and Daniell, *Second Year Latin*, Text Edition, 40 cents.

**Caesar's Gallic War.** One unit. Second year Latin. Texts, Greenough, D'Ooge and Daniell, *Second Year Latin*, Text Edition, 40 cents; Harkness, *Complete Latin Grammar*, \$1.25.

**Second Year German.** One unit. This course calls for about two hundred pages of moderately difficult reading, chiefly prose, with constant practice in written reproduction of selected portions. Texts, Prokosch, *Introduction to German*, \$1.15; Wildenbruch, *Lachendes Land*, 50 cents; Immensee, *Germelshausen*, *Der Lindenbaum*, edited by Manley, 50 cents; *Aus nah und Fern* for the current year, 60 cents; Kullmer, *A Sketch Map of Germany*, 25 cents.

**Physical Geography.** One unit. A careful study of air, ocean and land, with individual experiments and observations by the student on all subjects practicable. Text, Salisbury, *Elementary Physiography*, \$1.30.

**Agriculture.** One unit. The text to be used in this course is Warren, *Elements of Agriculture*, \$1.10. Individual experiments and observations by the student, together with the study of several bulletins, make up an important part of the work.

**Economics.** One-half unit. This course will take up the leading facts and principles of economics, including such subjects as division of labor, the factors of production, the laws of diminishing returns, demand and supply, value and price, wages, interest, rent and profits, credit, taxation, regulation of monopolies, and international trade. Texts, Johnson, *Introduction to Economics*, \$1.50; Davenport, *Outlines of Elementary Economics*, 80 cents.

**Reading Circle Course.** One-half unit. This course is based on the reading circle books and is intended to prepare students for county and state examinations upon these books. It will count for one-half unit entrance credit to the University. Texts, Bagley, *School Discipline*, \$1.00; Cubberly, *Rural Life and Education*, \$1.00. In order to secure these books at the prices named, it probably will be necessary to purchase them from the county manager of Reading Circle work, who usually is the county superintendent of schools. A more advanced course in Reading Circle work, one counting for University credit, is also offered by correspondence. In case this is desired, special inquiry should be made for it.

(If regular University courses are desired, write for the Announcement of the Extension Division for 1915-16. The University offers correspondence courses in the Colleges of Arts and Science and Agriculture, and in the Schools of Education and Engineering, as well as in high school subjects as here announced.)

## GENERAL INFORMATION

The cost of courses by correspondence is about one-third that of the same courses, including room and board, to students actually attending the University.

Correspondence work is as thoro as that done in actual attendance.

Courses may be begun any time during the year.

For admission to correspondence courses no preliminary examination is required.

Students are not allowed, except by special permission and then only when they are carrying less than the maximum amount of work, either to begin or to continue correspondence courses while taking work in residence at the University of Missouri or at any other school.

During an instructor's vacation a substitute will be provided to carry on his course whenever possible.

The maximum amount of work that may be done by correspondence is limited to two and one-half units for any one calendar year.

The time allowed for completing a course is one year from date of enrollment, except by special permission.

No fees are refunded on account of the inability of a student to complete a course or for any reason except at the discretion of the proper University authorities.

The University of Missouri belongs to all the people of the state, and is desirous of serving you. Now is your opportunity to make use of it. It is prepared through the Extension Division to go to you.

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All remittances should be made payable to Charles H. Williams, Secretary of University Extension, University of Missouri, Columbia, Missouri. No one is expected to send any fees until notified that his application has been approved.

For information regarding correspondence courses and for application blanks, write to

CHARLES H. WILLIAMS,  
Secretary of University Extension,  
University of Missouri,  
Columbia, Missouri.

# THE UNIVERSITY OF MISSOURI BULLETIN

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EXTENSION SERIES 14

EDITED BY CHARLES H. WILLIAMS

## TECHNICAL MANUAL ARTS FOR GENERAL EDUCATIONAL PURPOSES

BY

IRA S. GRIFFITH

*CHAIRMAN THE MANUAL ARTS DEPARTMENT*



UNIVERSITY OF MISSOURI  
COLUMBIA, MISSOURI  
JANUARY, 1916



THE UNIVERSITY OF MISSOURI BULLETIN, EXTENSION SERIES; EDITED BY CHARLES H. WILLIAMS, SECRETARY OF THE EXTENSION DIVISION; ENTERED AS SECOND-CLASS MATTER AT THE POST-OFFICE, COLUMBIA, MISSOURI; ISSUED MONTHLY. 2000

## Foreword

The present bulletin is one of two being issued in behalf of manual arts for general educational purposes by the Extension Division of the University of Missouri. The first presents expressional and technical manual arts for grades one to six inclusive. This bulletin deals with technical manual arts for grades seven to ten inclusive.

In this bulletin, acknowledgements are due Mr. Marshall H. Brigham, assistant in manual arts, for the arrangement of subject matter of the bulletin pertaining to the course of study and equipment for metal work; to Mr. Iram O. Royse, assistant in manual arts, for arrangement of subject matter pertaining to the course of study for first and second year high school mechanical drawing; to the Manual Arts Press, Peoria, Illinois, for permission to use illustrative material from the author's *Correlated Courses in Woodwork and Mechanical Drawing* and the illustrations on pages 27, 36, 37 from the *Manual Training Magazine*.

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## Part I. Introductory

It seems clear that cities with populations of 100,000 and less are hardly warranted in working out the problem of manual training for general educational purposes as fully as it has been worked out in the larger cities. To suggest a line of work of the greatest significance, with an expenditure for equipment within the reach of such cities, is one of the purposes of this bulletin. It is hoped that the bulletin may suggest a standard of accomplishment for manual arts for general educational purposes for grades seven to ten, both in subject matter and in equipment, which will meet with approval as a reasonable one in the light of recent development in pedagogical beliefs, as modified by the movement for vocational education.

The organization of subject matter contained herein presupposes a class of children taking the work not primarily for direct or immediate entrance to remunerative employment—tho thruout the bulletin a consideration of the industrial element is present both in the selection of technical experiences and in the study of industries—but rather a class of children not called upon to make a choice for entrance upon occupational preparation until the third year of high school. This assumption should in no wise be taken as expressing opposition to special elementary industrial schools for children forced thru unavoidable circumstances into early preparation for occupa-

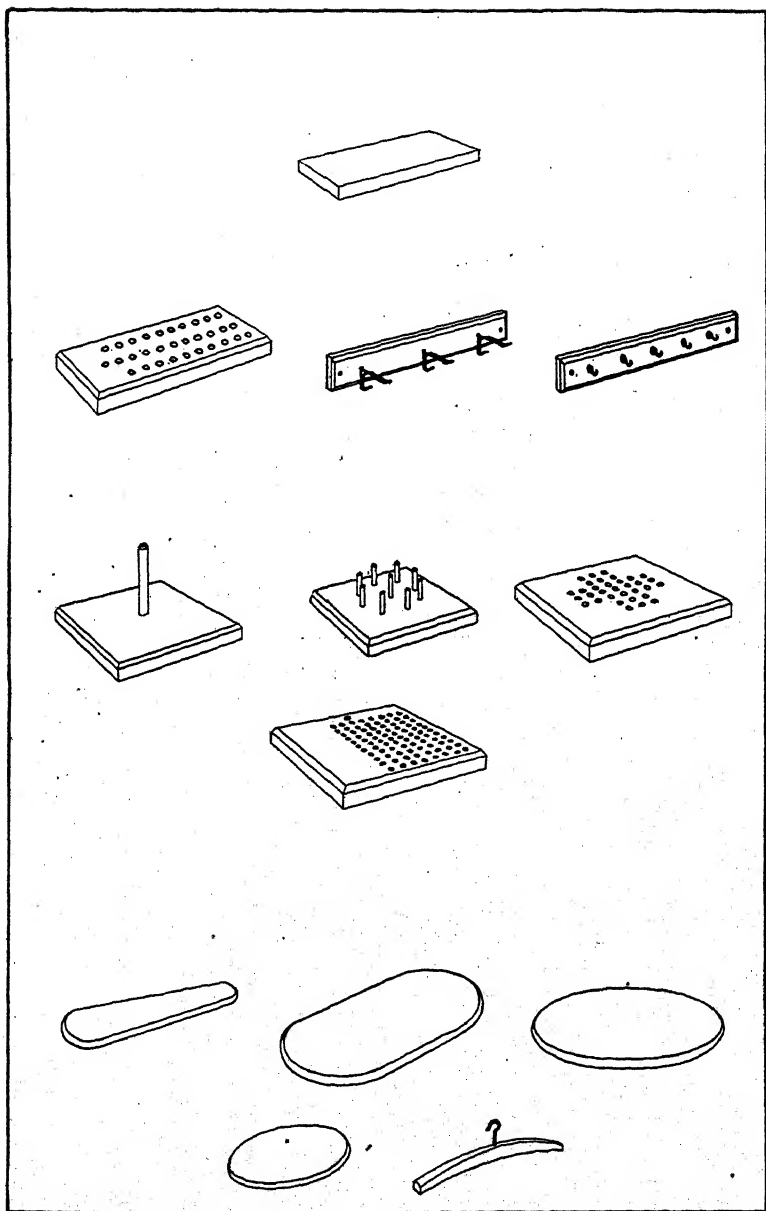


FIG. 1.—GRADE VII., GROUPS I.—IV.

tional labors. Such schools are necessary for the complete education of "all the children of all the people."

Technical manual arts, like any other subject given for general educational purposes, will justify itself just in proportion as it can show: (1) Similarity of subject matter considered in school to that which the individual will meet in life after leaving school; (2) similarity of method of procedure; (3) the giving of ability to pupils to generalize their specific experiences and see them in the light of "larger principles."

### STATE OF MISSOURI

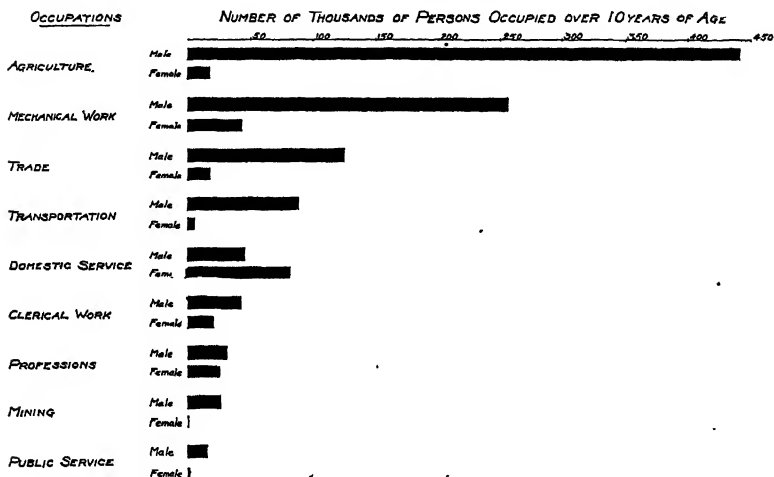


Fig. 2.—Distribution of persons engaged in gainful occupations in the state of Missouri.

Fig. 2 shows graphically the distribution of people in the state of Missouri engaged in the larger pursuits. From this it will readily be seen that by far the greater part of our people are engaged in the "manipulation" of concrete things rather than abstract ideas. Professor Thorndike says (*Principles of Teaching*, p. 248): "Training the mind means the development of thousands of particular independent capacities, the formation of countless particular habits, for the working of any mental capacity depends upon the concrete data with which it works." To neglect in our schools the giving of opportunity for technical experience and expression thru the manipulation of concrete materials is to ignore the welfare of that vast majority of our people who will live by the manipulation of materials. "Improvement in one special power rarely, if ever, means equal improvement in general." Years of training in "generalizations" based upon haphazard concrete experiences will not help much when, in after life, the boy or girl is brought face to face with the necessity for "quick decision" accompanied by prompt execution in a world of concretes. In-

deed, such discipline may even prove a hindrance thru having developed an attitude of mind which requires much time to consider all of the niceties involved in the passing of judgment upon derived abstractions, abstractions interesting in themselves but of less moment at the time than the prompt execution of the task in hand.

A paragraph from an article in the *Medical Review of Reviews*, September, 1915, reads: "Attentive control—the power of fixing the attention on one thing and then doing it to the exclusion of all others—is 'the one aim of true education', yet its loss is increasing at an alarming rate. We find more and more people who are victims of indecision, who cannot make up their minds." If school life is to be devoted exclusively to generalities, to abstractions, and "mental capacity depends upon the concrete data with which it works," need we be surprised to find "indecision" when the product of the school is brought face to face with the "realities," with the necessity for dealing with concretes? "To learn by doing is to learn with the best aids psychology and science have been able to discover." The remedy for a race afflicted with "indecision" is a liberal introduction of subject matter which will give to the children plenty of specific experiences with such concretes as may be found in the practical subjects. If such school experiences should do no more than continue the respect, interest, and pleasure which little children have in the manipulation of concrete materials, it would have better served the 95 per cent who must make their living by such manipulations than to have made them feel that theirs was a life of enforced drudgery.

All industrial pursuits depend for success upon a recognition and understanding of certain "conventional methods of procedure" coupled with an unconscious "tendency to act," once the recognition of "what comes next" enters the field of consciousness, or is suggested thru reflex muscular control. The "data" of the practical subjects, habits of mind and action, the "attitudes," are to be got only thru experiences with the data and methods of procedure common to such subjects. Accuracy of judgment developed in a study of formal logic is of little aid when judgment of a practical nature, based upon experience with specific practical data, is demanded. Every child should have some experience along one or more practical or technical lines of endeavor. The greater the number of lines available for choice the better, provided they are well organized and well taught.

The authors would be false to the subject did they not call attention to the fact that, while most academic subject matter deals too exclusively in generalities to supply a complete educational experience, manual training, as now taught by many with little or no qualifications for teaching the subject, too often deals too exclusively with the *details* of industrial experience. If manual training is to take the large place in the educational field which awaits it, it must so organize and teach its subject matter that details of specific experiences shall be seen by the pupil in their larger relationships. Manual training teachers must remember that their subject is to be justified not alone by "similarity of subject matter" and "similarity of method of procedure" but also by the extent to which it enables stu-

dents to formulate these specific experiences in terms of general principles.

In the upper grammar and high school grades emphasis has been placed upon method of procedure. To do this to the best advantage, there are suggested but two lines of industrial activities—woodwork with accompanying mechanical drawing and general metalwork with

### STATE OF MISSOURI

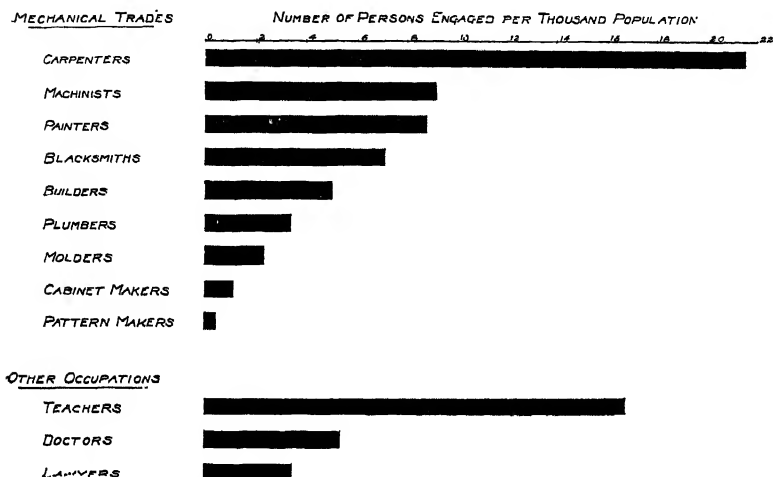


Fig. 3.—Distribution of persons engaged in mechanical trades in the state of Missouri

drawing. These two lines, as shown in Fig. 3, are more likely to fill that other requirement, similarity of subject matter, than any other industrial line, since more men are engaged in these lines than in any other industrial line. It should be recognized, of course, that in a community where some other industrial line is preponderant—printing, for example—emphasis might better be placed upon such activity instead of the ones outlined herewith. In any event, the requirements for extent of subject matter and equipment suggested in this bulletin should be the minimum with which any community supporting an accredited school should be satisfied.

In the lower grades, emphasis is placed upon variety of experiences, in technical manual arts as well as expressional—similarity of subject matter. One familiar with child nature and the principles of good teaching need not be told the reasons underlying this stressing of variety in the earlier years, shading off into an intensive consideration of some one activity in the upper grammar and high school grades.

No attempt has been made in this bulletin to treat other than manual arts for general educational purposes. The right of vocation-

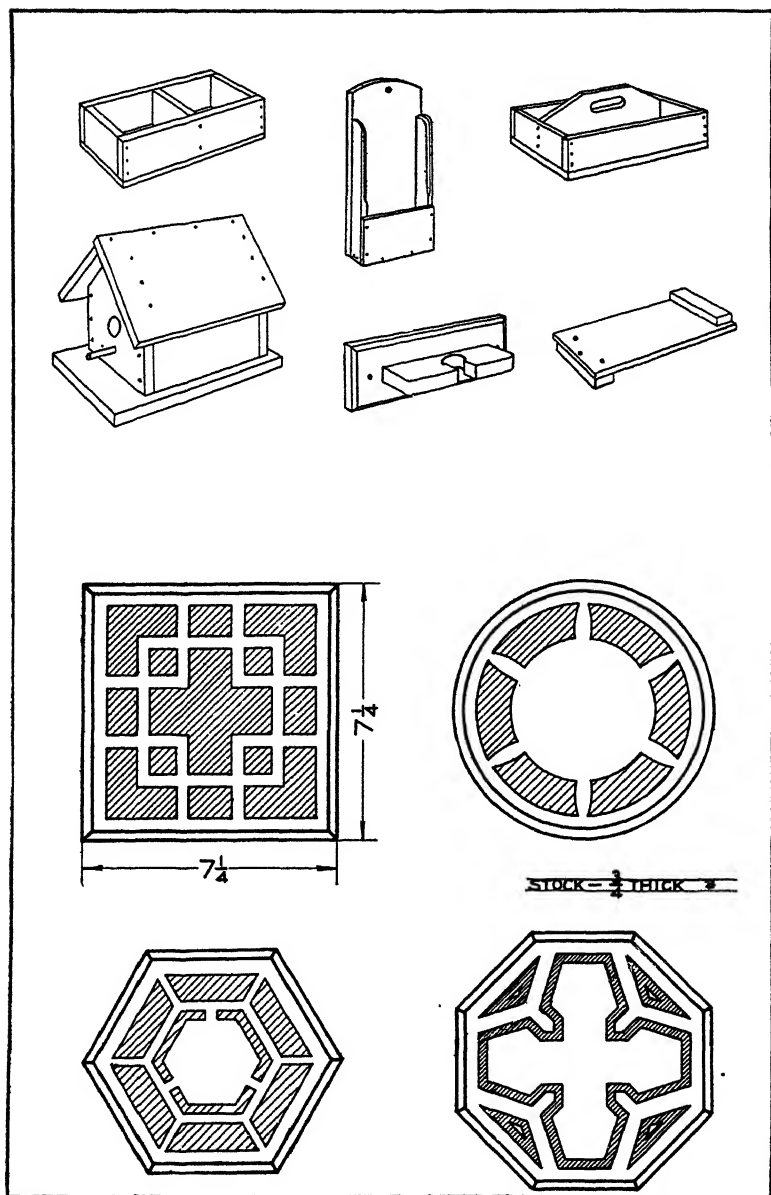


FIG. 4.—GRADE VII., GROUPS V.—VI.

al education to a place in our schools is recognized by shortening the time usually devoted to manual training in city high schools from four to two years. The extent to which high schools will be warranted in entering into this more highly specialized instruction will depend upon local community appreciation of its needs. The need of special industrial schools or courses for the economically unfortunate, paralleling the general educational courses from the seventh grade on, is also recognized.

In leaving the third and fourth year of high school open for vocational instruction, there is no intention to imply that a manual arts teacher, who has not had extended experience in the vocational work to be taught, is prepared to teach such work. It is intended to imply that a still more intensive study of some one line of work, with increased time allotment, should be available in these latter years.

It is the hope of the department that another bulletin may be published in the near future outlining such intensive work.

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## Part II. Technical Shopwork and Mechanical Drawing for Grades VII.-X., Boys

Technical manual training finds a place in schools because it provides "industrial experience," a fundamental experience not obtainable thru other school subjects. By industrial experience we refer to a training in some one of those kinds of works which fall under the heading of industrial pursuits, such as mechanical trades. (Fig. 3.) To have the greatest educational value, the specific experience of the shop and drafting room should be generalized in the mind of the student. This means that to the "making of something," the art, there must be added an understanding of the fundamental principles, the science, underlying the processes outlined in the syllabi, and the student should be brought to see the significance of the specific shop experiences in their relation to other life experiences. For example, the order of procedure in squaring up a piece of stock in woodwork in which a face-side and face-edge are used is not arbitrarily fixed but depends upon the fact that the conventional method used by mechanics reduces the chances for error to the lowest possible number. The student should be shown the "why" as well as the "what." The method used in testing a piece of wood for squareness is also applicable to metalwork, such as in testing when chipping and filing a piece of cast iron to a rectangular solid form. It is this giving to the pupil ability to "carry over" from one specific to another specific experience because he understands the principle involved that makes the work worth while.

The formation of a habit of knowing the name of every tool and the names of their principal parts, the habit of carrying on necessary conversation in proper technical terms, the knowledge that underlying every process of every trade are reasons based upon hun-



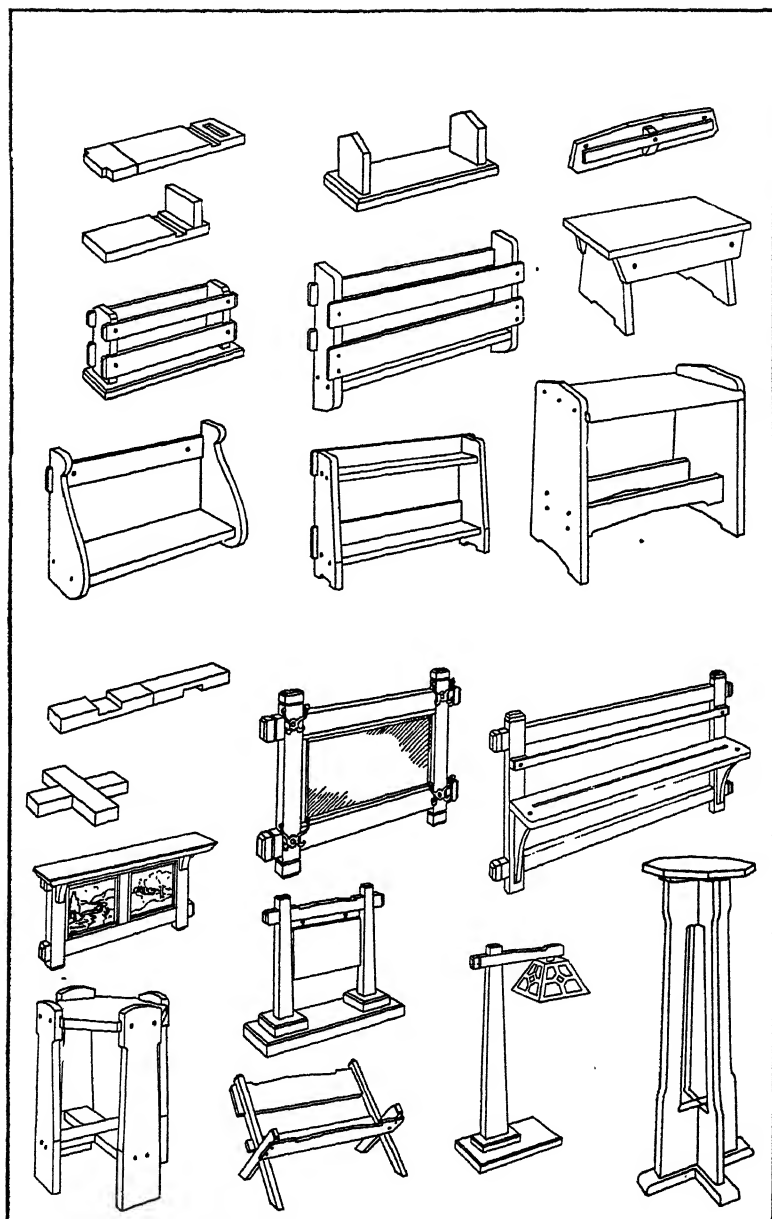


FIG. 5.—GRADE VIII., GROUPS VII.—VIII.

dreds of years of race experience that can be resolved into scientific statements which the student should know—these things, as well as the manipulation of material, are essential factors in the industrial experience.

The work should consist of (1) recitation upon assigned reading closely related to the work under way in shop or drafting room; (2) lecture demonstration of new work about to be executed; (3) shop or drafting work. The recitation should not exceed ten or fifteen minutes. The lecture-demonstration, if properly planned, need not exceed twenty minutes.

The use of a text is recommended as the most efficient way of placing before the students material for study. Such a text should deal with principles stated in general terms rather than in connection with some specific project, and the assignments should be made from day to day according to the subject matter under consideration in the shop rather than by page sequence.

From one-third to one-half of the time allotted to a unit should be devoted to mechanical drawing.

For pedagogical reasons, woodwork and mechanical drawing should both, in the main, make use of the "useful model." The more elementary subject matter in both mechanical drawing and woodwork should be given in the upper grammar grades. For this elementary school work, not less than two and one-half hours per week for two years or five hours per week for one year should be given. The equipment should be not unlike that used in the high school, and the teacher should be as well prepared for this special work as is the high school teacher. Under such conditions the high school may more nearly meet proper high school standards in this work.

The subject matter should be so planned that new matter may be introduced gradually. Instruction should be by class rather than individual. Due consideration being given to individual differences on the part of pupils, the use of the group system is strongly recommended as the most efficient way of providing class instruction.

### Woodwork and Mechanical Drawing

The outline of work for the first unit is as follows:

*Mechanical Drawing.*—The problems of the drafting room should be made to connect as closely as possible with those of the shop. The introduction of mechanical drawing subject matter in an orderly manner should not be sacrificed to meet such correlation, however. By proper selection and arrangement, working drawings may be made the means of introducing many, if not all of the conventions enumerated below.

The following should be considered: (1) Freehand lettering—placing, form, slant, spacing, stroke; (2) working drawings—woodwork, stock bills, material costs figured, freehand working sketches; (3) straight lines—use of T-square, triangles, pencil, ruling pen, dividers, scales, conventional lines; (4) circles—use of compass, center lines, cross-hatching; (5) tangents—location of centers and points of tangency; (6) planes of projection—elementary principles of projection; (7)



revolution of objects—"views" of objects in simple and inclined positions.

*Woodworking*—The following should be considered: (1) Laying out tools—rule, try-square, bevel, marking gage, slitting gage, mortise gage, dividers, pencil, knife; (2) saws—crosscut or handsaw, rip saw, compass-saw, backsaw, turning-saw, filing of saws; (3) planes—kinds of planes, setting and adjusting irons, squaring up mill-planed stock, squaring up rough stock, face marks, planing a chamfer; (4) boring tools—brace, auger bit, drill bit, gimlet bit, countersink bit, screwdriver bit, bradawl, thru boring, boring to depth; (5) chisels—kinds of chisels, horizontal, vertical and oblique paring, paring chamfers, the firmer gouge, grinding beveled-edge tools, whetting beveled-edge tools, oil-stones, shapes of cutting edges of various plane irons, testing for sharpness; (6) form work and modeling—making a cylinder, making curved edges, modeling; (7) duplicate part work—laying out duplicate parts, scraping, sandpapering, hammers, nails, nailing, nailset, withdrawing nails, screwdriver, screws, fastening with screws, designation of nails and screws, glue, clamps, gluing and clamping; (8) joinery—the dado, crosslap, glue joint, doweling, keyed mortise-and-tenon, blind mortise-and-tenon, miter joint, dovetail joint; (9) wood—structure, growth, respiration and transpiration, moisture, shrinkage, weight, grain; (10) lumbering and milling—lumbering, milling, quartersawing, waste, transportation, seasoning, lumber terms and measurements; (11) common woods—classification and properties of cedar, cypress, pine, spruce, ash, basswood, birch, butternut, cherry, chestnut, elm, gum, hickory, maple, red and white oak, sycamore, tulip or yellow poplar, walnut, mahogany; (12) wood finishing—kind of finishes, application of filler, stains, wax, copal vanish, shellac, patching, painting, rubbed finishes.

### **Metalwork and Mechanical Drawing**

The outline of work for the second unit is as follows:

*Mechanical Drawing*—(1) Mechanical lettering—placing, form, slant, spacing, stroke; (2) working drawings—metal work; (3) developments—prism, cylinder, pyramid, cone; (4) intersections—axes in the same plane, axes in different planes; (5) isometric and cabinet drawing.

*Metalwork*—The work outlined may cover (1) forging—drawing out, bending, twisting, welding, hardening, tempering; other subject matter considered—various kinds of forges, anvils, hammers, tongs, fluxes, iron, steel, various methods of hardening, reduction of iron ore, relation of forging to the industries; (2) benchwork—chipping, grinding, filing, testing, fitting, drilling, riveting, polishing; additional subject matter—kinds of chisels, uses, cutting angles, shapes, various abrasives, kinds of files, ways of testing, various drills, drilling machines, polishing mediums and methods, casehardening; (3) molding—tempering of sand, ramming, coping, venting, gate cutting, coring, pouring; additional subject matter—molding sands, parting sand, use of trowel, slick, rammer, ventwire, gate cutter, spruepin, baked



FIG. 7.—GRADE IX., GROUP IX. PROJECTS.

and green sand cores, kinds of patterns (wood and metal), several part patterns and molds, metals that may be used; (4) art metal—work done in copper, brass, and sheet iron, beating, raising, etching, drilling, sawing, annealing, repousse, planishing, finishing, soldering (hard and soft), bending, punching, riveting; additional subject matter—production of copper, brass, and sheet iron, designing, transferring, use of coppersmithing tools, planishing hammers, neck hammers, stakes, anvils, blowpipe, jewelry saws, repousse tools, chiseling of sheet iron, relation to coppersmithing and sheet metal industries; (5) lathe work—turning, filing in lathe, drilling, polishing, thread cutting with tap and die, annealing, hardening and tempering; additional matter considered—various kinds of lathes, various tools, machine and hand cut threads, various methods of hardening and tempering, methods of annealing, relation to commercial tool making; (6) tinsmithing—cutting out patterns, rolling, seaming, grooving, bending, wiring, soldering; additional matter considered—making of tinplate, use of brake, edging machine, wiring machine, shears, rolls, crimper, relation to the manufacture of tin and sheetmetal articles.

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## Part III. "Type" Outlines

### Technical Shopwork and Mechanical Drawing, Grades VII.-X.

#### Technical Shopwork for Boys

##### Type Outline for Bench Woodwork

##### Grade VII.

Time: Two and one-half hours per week for twenty-four weeks, or the equivalent.

*Group I.* Squaring up mill-planed stock. (No definite dimensions but to be square and as large as the stock will allow.)

Time: One week.

Stock: Soft wood, S-2-S,  $\frac{3}{4}$ "x6"x12".

Processes: Edge-planing, testing for uniformity of width, end-planing.

Tools: Jackplane, try-square, (blockplane).

Projects: Cutting board.

*Group II.* Squaring up mill-planed stock. (Definite dimensions.)

Time: Three weeks.

Stock: Soft wood, S-2-S,  $\frac{3}{4}$ "x4 $\frac{1}{4}$ "x10 $\frac{1}{2}$ ",  $\frac{3}{4}$ "x2 $\frac{3}{4}$ "x18 $\frac{1}{2}$ ".

Processes: Surface smoothing, gaging, measuring, lining, back-sawing (parallel to line), boring, chamfering.

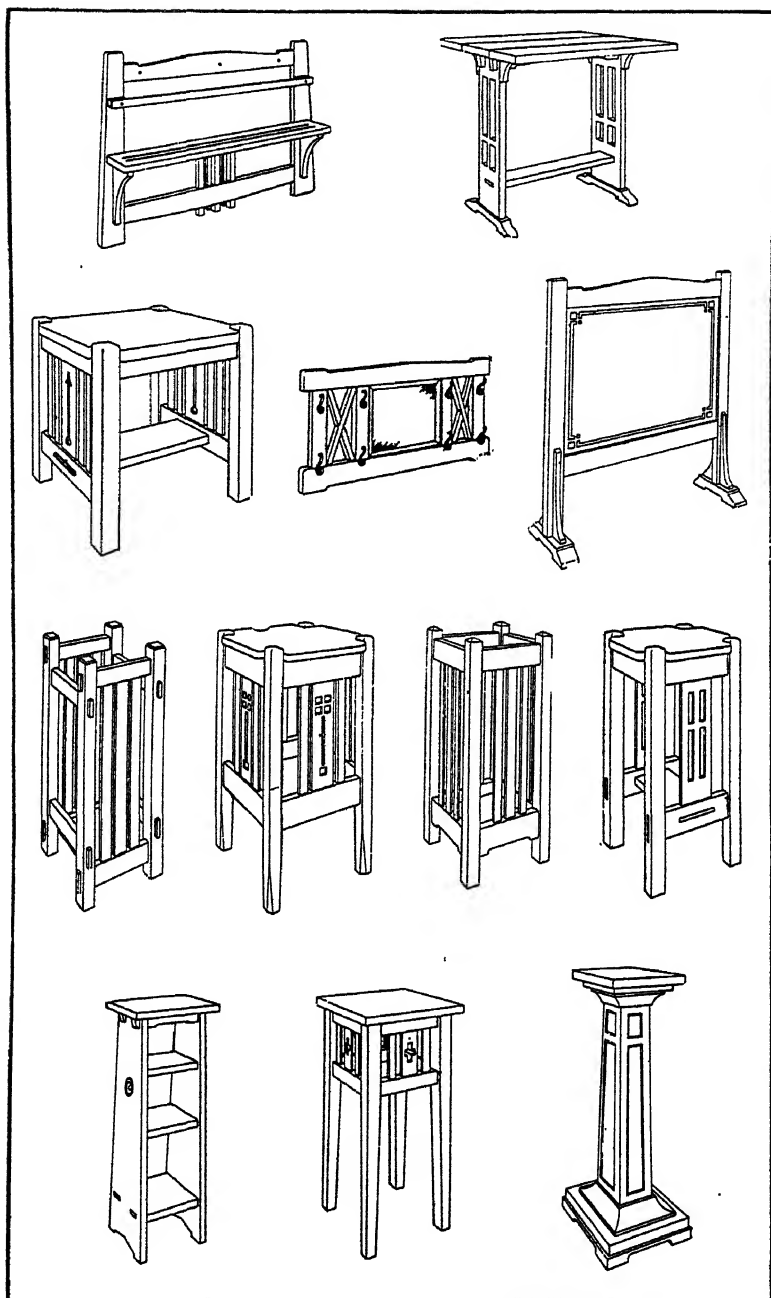


FIG. 8.—GROUP IX., (PROJECTS CONTINUED).

Tools: (Smooth plane), marking gage, rule, knife, backsaw, brace and bits, pencil gage.

Projects: Counting board, hatrack, keyrack.

*Group III.* Squaring up rough stock.

Time: Four weeks.

Stock: Soft wood, rough, 1"x8"x8".

Processes: Surface leveling, etc., crosscut sawing, rip sawing, sandpapering.

Tools: Straightedge, winding sticks, crosscut saw, rip saw.

Projects: Ringtoss, spoolholder, gameboard, laundry register.

*Group IV.* Working curves.

Time: Three weeks.

Stock: Soft wood, S-2-S,  $\frac{3}{4}$ ".

Processes: Getting out stock, curve sawing, (first use of chisel), spokeshaving.

Tools: Steel square, turning saw. (chisel), spoke shave.

Projects: Sleeveboard, breadboard, cakeboard, scouring board, coathanger.

*Group V.* Fastening with nails and screws. Duplicate parts.

Time: Six weeks.

Stock: Soft wood, S-2-S,  $\frac{3}{8}$ ",  $\frac{1}{2}$ ",  $\frac{3}{4}$ ".

Processes: Duplicate parts, nailing, setting nails, fastening with screws.

Tools: Hammer, nailset, screwdriver.

Projects: Nailbox, polishing box, knifebox, birdbox, broomholder, benchhook.

*Group VI.* Appreciation in design. Structural, decorative.

Time: Remainder of school year.

Stock: Soft wood, S-2-S,  $\frac{3}{8}$ ",  $\frac{1}{2}$ ".

Processes: Structural design, decorative design, outlining, staining, waxing.

Tools: Stains, brushes, wax.

Projects: Tablemats, thermometer back, calendar back, letter holder, billfile, handkerchief box, glovebox.

#### **Grade VIII.**

Time: Two and one-half hours per week.

*Group VII.* Groove joints. Woodfinishing.

Time: Twelve weeks.

Stock: Exercise piece, soft wood, close grained,  $3\frac{1}{4}$ "x10 $\frac{1}{2}$ ", any thickness to reduce to  $\frac{3}{4}$ ". Application—Chestnut, S-2-S,  $\frac{3}{8}$ ",  $\frac{3}{4}$ ", 1".

Processes: Exercise—chiseling grooves, sawing to fit. Applications.

Tools: Chisel, mallet.

Projects: Exercise piece, bookrack, necktie rack, magazine rack, footstool, wallrack, wallshelf, deskshelves, square taboret, stool.

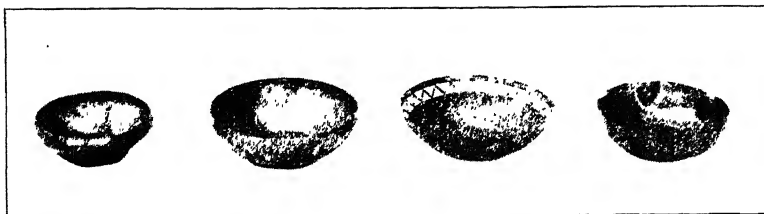
*Group VIII.* Crosslap joint.

Time: Twelve weeks.

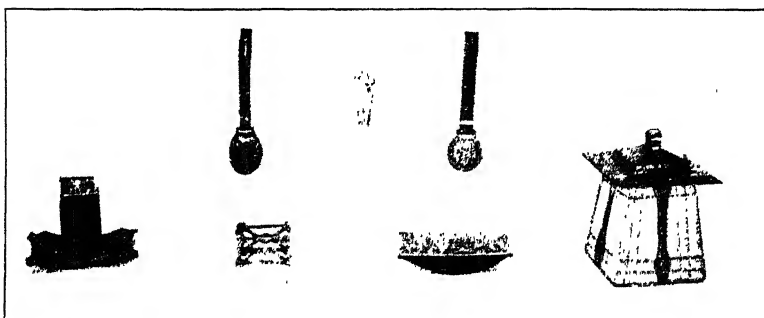
Stock: Exercise piece, soft wood, close grained,  $1\frac{3}{4}$ "x10 $\frac{1}{2}$ ", any thickness to reduce to  $\frac{3}{4}$ ". Application—Chestnut, S-2-S,  $\frac{3}{8}$ ",  $\frac{3}{4}$ ", 1".

Processes: Exercise—crosslap joint. Applications.

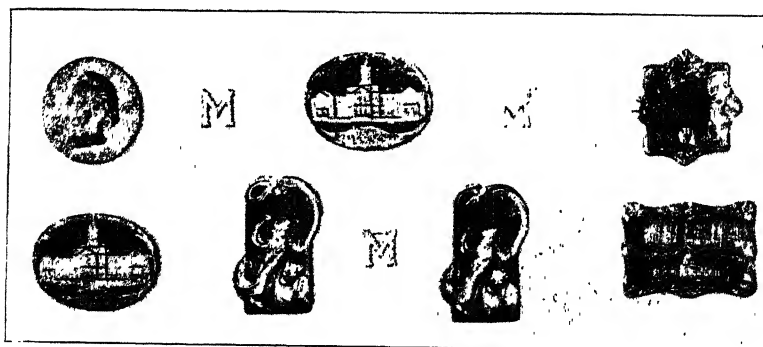




*Art metal projects*



*Art metal projects*



*Foundry projects*

FIG. 9.—GENERAL METALWORK

Tools: Glue, hand clamps.

Projects: Exercise piece, booktrough, cluster drop, desklight, calendar mount, hallrack, picture frame, octagonal taboret, plate-rack, pedestal.

### **First Year High School Woodwork**

Joinery: Board and framed structures.

Time: One and one-half hours per day, three days per week, thirty-six weeks.

Stock: Close grained wood, rough or mill-planed, one-quarter sawed white oak, S-2-S.

Processes: Exercises — Mortise-and-tenon, (keyed, blind), miter, modeling, glue joint. Applications.

Tools: Jointer, smoothplane and full tool set, individual edge tools, irons and chisels, if possible, bandsaw, jigsaw.

Projects: Indian stool, umbrella stand, taborets, armchair (simplified), sidechair (simplified), leg rest, magazine stand, small tables, booktrough, piano bench, footstool, telephone stand and seat, etc., etc.

### **Type Outline for General Metalwork**

#### **Second Year High School Metalwork**

Time: One and one-half hours per day, five days per week, thirty-six weeks.

##### *Group I. Forging.*

Time: Four weeks.

Stock: Norway or Swedish iron, mild steel, tool steel.

Processes: Drawing out, bending, heading, twisting, upsetting, punching, welding, hot-chiseling, swaging, hardening, tempering, annealing.

Tools: Forge, anvil, ball-pein hand hammer, sledge, tongs, swage (top and bottom), hot cutter, hardie, hand punch, heading tool, cupping tool, top and bottom fuller.

Projects: Scriber (forge only), ring (open), gate hook, chain links, wrench (forge only), bolt, cold chisel, etc.

##### *Group II. Bench metalwork.*

Time: Six weeks.

Stock: Cast iron, mild steel, tool steel, brass.

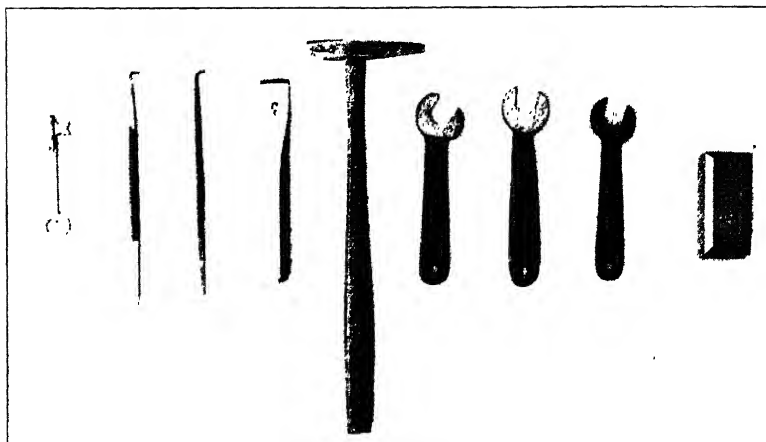
Processes: Chipping (rough and finish), grinding, scribing on iron (use copper sulphate), filing (rough and finish), testing for squareness, fitting, drilling, riveting, polishing, case hardening mild steel, coloring of steel by heat.

Tools: Emery wheel, 10" bastard and 8" smooth files, machinist's hammer, cold chisel (flat), try-square, scriber, 6" steel rule, emery cloth No. 1, key files, 8" half round files (2d cut), drill press, drills, rivet set.

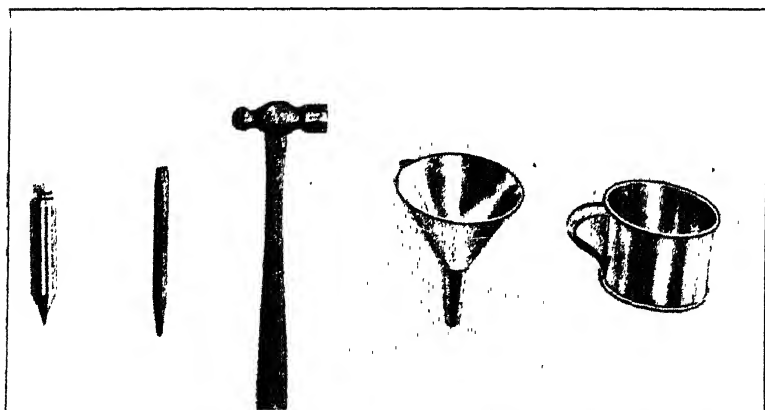
Projects: Scriber (finish), paper weight (cast iron), wrench (finish), calipers (steel), keys (brass and iron).

##### *Group III. Molding and founding.*

Time: Four weeks.



*Forging and benchmetal projects*



*Metal turning and tinsmithing projects*

FIG. 10.—GENERAL METALWORK

Stock: Molding sand, parting sand, core mixtures and binders, graphite, type metal, scrap brass, aluminum.

Processes: Tempering sand, ramming, coping, venting, gate cutting, coring (green sand), making baked cores, setting dry cores, pouring type metal, brass and aluminum, cheek molding.

Tools: Flask, top and bottom boards, riddle, rammer and shovel, strike, bellows, lifter and drawspike, rapping iron, trowel, spoon slicker, sprue pin, vent wire, gate cutter, reverberatory furnace and ladle, or crucible and good forge, patterns and core boxes.

Projects: Molds of solid and split patterns illustrating simple molding, coping down, green cores, baked cores, casting of typical problems in white metal, candlesticks, watch fobs, belt buckles, plaques, trays and other art objects in brass or bronze or aluminum, door knockers, pen trays, inkwells, etc.

*Group IV. Art metalwork.*

Time: Fourteen weeks.

Stock: Copper, high and low brass (soft and spring), silver, leather, semi-precious stones.

Processes: Etching, planishing, finishing (by heating, plating, chemically coloring), preserving, soft soldering, bending, lapping, beating, raising, fluting, paneling, necking-in, repousse, saw piercing, hard soldering, riveting, seaming, stone setting, silversmithing, coppersmithing.

Tools: Ball-pein hammer, rawhide mallet, special coppersmith's hammers, half round files, small cold chisel, metal snips, flat and round nose pliers, blow pipe, foot bellows, soldering copper and heater, jeweler's saw frame and saws, drills (small), wire brushes, buffing wheel, dividers.

Projects: Watchfob, tiepin, hatpin, paperknife, teapot block, book ends, blotter top, blotting pad corners, letter-rack, plate (etched), pen tray, plain bowl, fluted or paneled bowl, napkin ring (soldered and riveted), napkin clip, hinge, drawer pull, match holder, inkwell, candlestick.

*Group IV. Art metalwork (continued).*

Processes: Ring casting.

Tools: Stakes and anvil heads, leveling block, pitch block, raising block, burnishers, repousse tools.

Projects: Lanterns, lamp, silver spoons, rings, and other jewelry, cast signet rings, jewelry with set stones, etc.

*Group V. Metal turning.*

Time: Five weeks.

Stock: Mild steel, tool steel, brass.

Processes: Plain turning, taper turning, drilling, filing in lathe, machine threading, boring in chuck, knurling, annealing, hardening, tempering, polishing, hand graving, power graving, tool dressing.

Tools: Engine lathes, sensitive drill press, lathe chuck, round nose turning tool, side tool, outside threading tool, inside threading tool, round nose boring tool, square nose boring tool, knurling tool, center drill (combination drill and reamer), twist drills, files, emery cloth, hand diamond-point graver, power hacksaw, hand hacksaw.

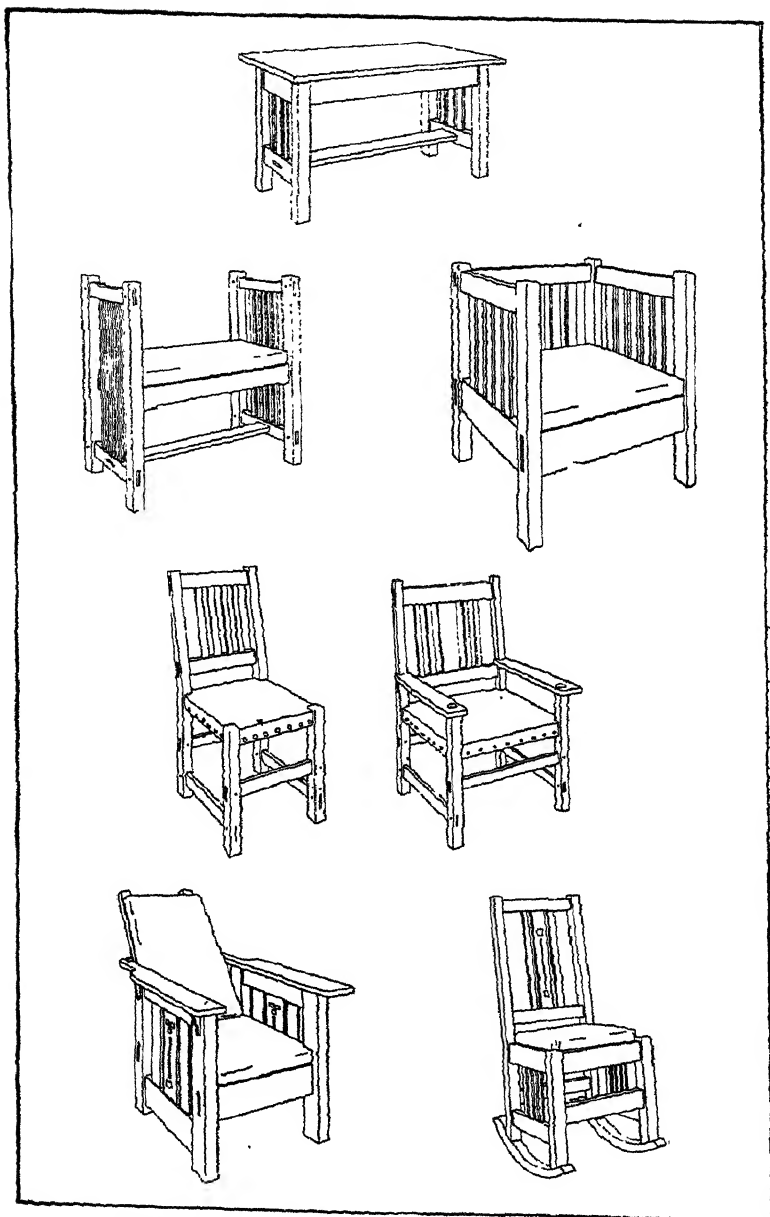


FIG. 11.—GROUP IX., (PROJECTS CONTINUED).

Projects: Ball-pein hammer, plumb-bob, center punch, brass ink-well, etc.

*Group VI.* Tin smithing.

Time: Five weeks.

Stock: Sheet iron, tin plate, galvanized iron, iron wire.

Processes: Cutting out patterns, rolling, shearing, grooving, seaming, bending, wiring, soldering, riveting.

Tools: Groover, tinner's hammer, soldering copper, brake, edging machine, wiring machine, shears (foot power), tinner's snips, raw-hide mallet, rivet set, rolls, crimper.

Projects: Bread pan, funnel, tin cup, 2-piece elbow (soldered), 3-piece elbow (seamed), two pipes intersecting at right angles, two pipes intersecting at forty-five degrees, etc.

## Technical Mechanical Drawing for Boys

### Type Outline of Drawing and Shop Work, Correlated

#### Grade VII.

Time: Approximately two and one-half hours per week for twelve weeks, beginning in September.

##### *Group I.*

Principles: Straight lines (use of instruments), angles, lettering.

Applications: Introductory sheet.

##### *Group II.*

Principles: Order of procedure, relation of views, blocking out, simple dimensioning, scale.

Applications: Woodwork, Group I.

##### *Group III.*

Principles: Foreshortening.

Applications: Woodwork, Group II.

##### *Group IV.*

Principles: Geometric construction — circles, hexagon, octagon, ellipse.

Applications: Geometric construction sheet.

##### *Group V.*

Principles: Hidden edges.

Applications: Woodwork, Group III.

##### *Group VI.*

Principles: Center lines, tangents, points of tangency, cross-sections.

Applications: Woodwork, Group IV.

##### *Group VII.*

Principles: Working drawings, representing screws and nails, broken views.

Applications: Woodwork, Group V.

##### *Group VIII.*

Principles: Working drawings (continued), representing screws and nails, broken views.

Applications: Woodwork, Group V.

*Group IX.*

Principles: Stock bills.

Applications: Woodwork, Group V.

*Group X.*

Principles: Figuring costs.

Applications: Woodwork, Groups I.—V.

*Group XI.*

Principles: Appreciation in design, structural, decorative.

Applications: Woodwork, Group VI.

*Group XII.*

Principles: Templets or patterns.

Applications: Woodwork, Group VI.

#### **Grade VIII.**

Time: Approximately two and one-half hours per week for twelve weeks, beginning in September.

*Group I.*

Principles: Working drawings.

Applications: Woodwork, Group VII.

*Group II.*

Principles: Working drawings.

Applications: Woodwork, Group VIII.

*Group III.*

Principles: Working drawings.

Applications: Woodwork, Groups VII. and VIII.

#### **Group IV.**

Principles: Stock bills.

Applications: Woodwork, Groups VII. and VIII.

*Group V.*

Principles: Figuring costs.

Applications: Woodwork, Groups VII. and VIII.

*Group VI.*

Principles: Design—structural, decorative.

Applications: Woodwork, Groups VII. or VIII. (one project).

*Group VII.*

Principles: Templets or patterns, working drawing, stock bill and cost.

Applications: Based on group just preceding.

*Group VIII.*

Principles: Principles reviewed—straight lines.

Applications: Problems—cf. Group I. Bennett's "Problems in Mechanical Drawing".

*Group IX.*

Principles: Circles.

Applications: Cf. Bennett's, Group II.

*Group X.*

Principles: Tangents.

Applications: Cf. Bennett's, Group III.

*Group XI.*

Principles: Planes of projection.

Applications: Cf. Bennett's. Group IV.

*Group XII.*

Principles: Final review.

Applications: Solution of "problems" "set" by pupils for one another.

**First Year High School Mechanical Drawing**

Time: Approximately ninety minutes per day, two days per week for the year.

*Group:* Lettering.

Tools: Pencil.

Processes: Freehand vertical and slant lettering; spacing, forming, practicing strokes.

Projects: Alphabets from "Problems in Mechanical Drawing", Bennett.

*Group:* Working drawings.

Tools: Pencil, scale, triangles, T-square, dividers, compasses.

Processes: Penciling straight lines; use of tools; location of centers, points of tangency, center line; cross hatching; projecting; modification of designs.

Projects: Woodwork, Group IX.

*Group:* Computations.

Tools: Pencil.

Processes: Making of stock bills, computing of "board feet", determination of costs.

Projects: Woodwork, Group IX.

*Group:* Inking.

Tools: T-square, triangles, ruling pen, dividers, scale, pencil.

Processes: Inking straight lines, curves, tangents, conventional lines, use of tools, study of views.

Projects: "Problems in Mechanical Drawing", Bennett, Groups I., II., III., IV.

*Group:* Revolution of solids.

Tools: T-square, triangles, ruling pen, dividers, scale, pencil.

Processes: Finding and drawing views of simple solids in upright and inclined positions; penciling and inking.

Projects: "Problems in Mechanical Drawing", Group V.

**Second Year High School Mechanical Drawing**

Time: Approximately forty minutes per day, five days per week for one year.

*Group:* Lettering.

Tools: Pencil 4H, T-square and triangles or cross section paper.

Processes: Freehand forming of slant letters, spacing, form, slant, strokes, work from the analysis.

Projects: Single stroke inclined caps and lower case.





Projects: Roman caps and lower case; Gothic caps and lower case, or others.

*Group:* Developments, problems.

Tools: Drawing instruments, T-square, triangles, irregular curves.

Processes: Finding true lengths of lines, developments.

Projects: Cf. Bennett, French; cylinders, cones, prisms, pyramids, truncated cones, etc.

*Group:* Intersections, problems.

Tools: Drawing instruments, T-square, triangles, irregular curves.

Processes: Visualizing, projecting points, "sketching in" curves, drawing curves accurately.

Projects: Cf. Bennett, French; cylinders, cones, cylinder and cone, spheres, prisms, etc.

*Group:* Working drawings, metalwork.

Tools: Drawing instruments, T-square, triangles, irregular curves.

Processes: Conventions, sections, etc.; dimensioning; placing titles; specifications; views-relations; study of execution of machine work; tracing; blue printing.

Projects: Hand wheel; forms of threads; conventions in threads; bolts with tables; screw-heads; spurgear; pipe fittings; gate hook, 2pc. elbow; chain links, 3 pc. elbow; cold chisel, 2pc. pipes at right angles; calipers, 2 pipes at 45 degrees; wrench, iron paper weight, scriber, funnel, tin cup, bread pan, other problems in design.

*Group:* Isometric.

Tools: Drawing instruments, T-square, triangles, irregular curves.

Processes: Revolving of figures; location of axes; measuring on isometric lines.

Projects: Circles, oil stones, steps, bracket.

*Group:* Cabinet.

Tools: Drawing instruments, T-square, triangles, irregular curves.

Processes: Selection of faces for the picture plane, placing of the long dimension, drawing axes.

Projects: Cube, crank, table, desk.

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## Part IV. Equipment for Shop Work and Mechanical Drawing

### Shops and Equipment

For grammar school shops, and high school shops where little wood-working machinery is available, the shop arrangement of Fig. 12 will be found quite satisfactory. Various modifications of this arrangement will suggest themselves to the resourceful teacher, ranging all

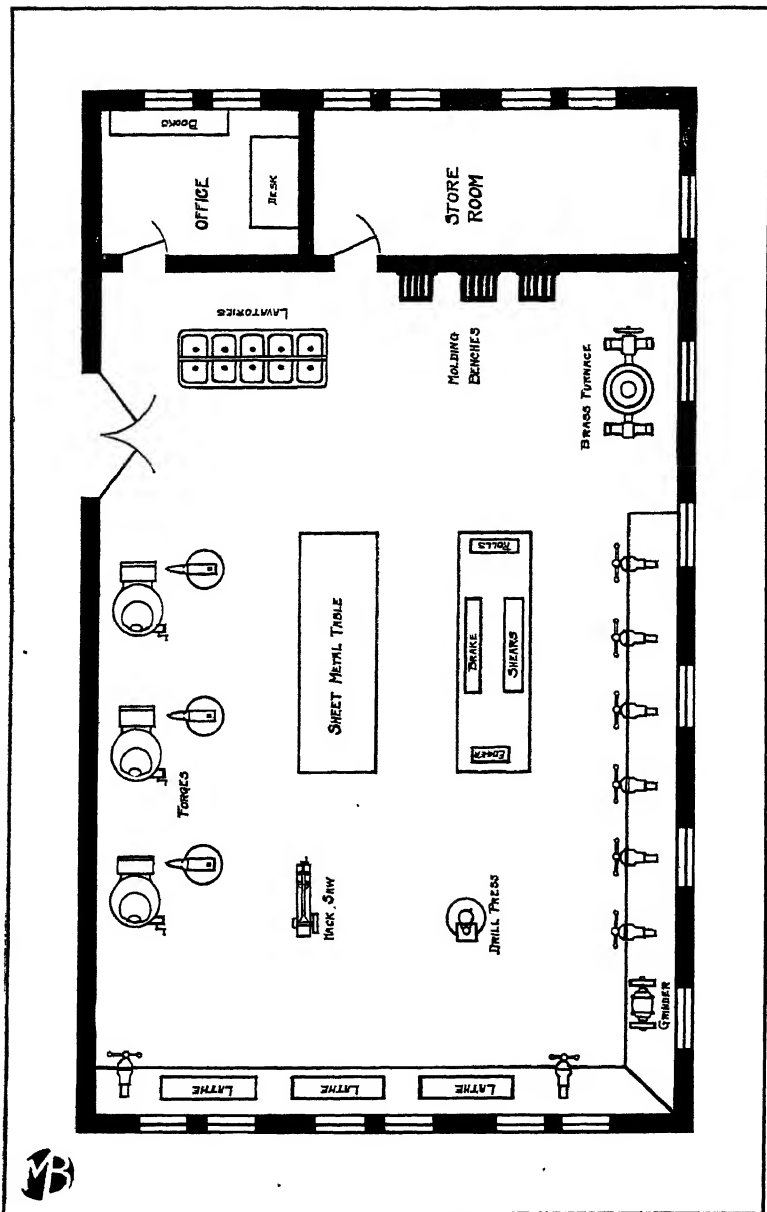


FIG. 13.—PLAN FOR A METALSHOP

the way from the simple addition of three woodturning lathes at the rear of the room to an enlargement of quarters sufficient to include a complete set of woodworking machines.

Avoid the expenditure of much money for equipment that is not to be used sufficiently to return "good interest" upon the investment. For example, it is possible to teach woodturning to a class of twenty boys with an equipment of but five lathes and fifteen benches where the group system is being used in the benchwork. This would require a little extra teaching upon the part of the instructor, as he would have to plan his work so he could give turning instruction to a group of five boys after he had given his instruction in benchwork to the whole class. By setting aside two days of the three for instruction of the whole class in benchwork and one day of the three for instruction of a group of five in turning, and by changing the boys at the lathes every week, every one is kept profitably occupied and no equipment is left standing idle. Other numerical combinations will suggest themselves. In any combination, one-fourth of the year's time for turning is a good proportioning.

The work of the first year high school may consist of furniture construction, carpentry, and pattern making. The aim of these courses, however, is not so much to make cabinet makers, carpenters, and pattern makers out of the students as to give them a kind of activity which, while thoroly correct in its technic, will secure their interest in manual activities in general thru the pleasure they get from the work being done and thereby create an attitude of joy in work, together with a desire to know and do more. For this reason, if boys take more delight in furniture construction and turning than in pattern making, it is well to let them make furniture at this stage even tho comparatively few men are employed in woodturning and in furniture construction. That is to say, the creation of a proper attitude toward work in general is a most desirable accomplishment in manual arts for general educational purposes. If to this we can also add work in a material in which most of the boys will work later in life, so much the better. Fig. 3.

In Fig. 13 is shown the floorplan of a shop for general metal work such as is suggested for second-year high school general educational courses. The chief features of this arrangement are economy of equipment and provision for variety of metalworking experiences. Such an arrangement is recommended for high schools where limited numbers do not warrant separate shops.

With such an arrangement, it is intended that the instructor shall keep three kinds of work progressing at the same time, in the same class. (Consult Outline in Metalwork, pp. 19-23.) At a given period six students will be at work on the bench; that is, for a semester, these six students will have twelve weeks of art metalwork, followed by six weeks of bench metal work, using the same bench equipment thru the whole semester. During this same time six more students in groups of threes may have molding, forging, metal turning, and tinsmithing. One group of three students will work for five weeks at tinsmithing, while the other group works four weeks at molding. The

# FIRST SEMESTER

# SECOND SEMESTER

ART METAL 12 WEEKS 6 PUPILS				BENCH METAL 6 WEEKS			
TIN-SMITHING 5 WKS. 3 PUPILS	FORGING 4 WKS.	MOLDING 4 WKS.	METAL TURNING 5 WKS.	TIN-SMITHING 5 WKS. 3 PUPILS	FORGING 4 WKS.	MOLDING 4 WKS.	METAL TURNING 5 WKS.
MOLDING 4 WKS. 3 PUPILS	METAL TURNING 5 WKS.	TIN-SMITHING 5 WKS.	FORGING 4 WKS.	MOLDING 4 WKS. 3 PUPILS	METAL TURNING 5 WKS.	TIN-SMITHING 5 WKS.	FORGING 4 WKS.
ART METAL 12 WEEKS. 6 PUPILS.				BENCH METAL 6 WEEKS.			

FIG. 14.—DIAGRAM OF TEACHING SCHEDULE FOR GENERAL METALWORK.

tinsmithing group will change to forging at the end of their five weeks. The molding group will change to metal turning at the end of the four weeks. During the second half of this semester these groups of threes will alternate so that the three having tinsmithing and forging will take molding and metal turning, and *vice versa*. At the end of the semester the six boys at the bench will give way to the six boys who were grouped in threes the first semester and the first semester's work will be repeated with the new grouping of students. Figs. 13 and 14.

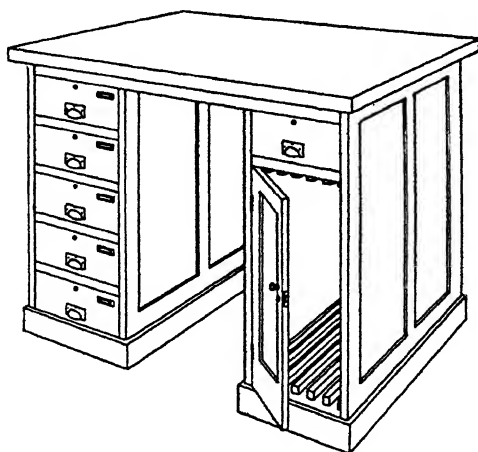
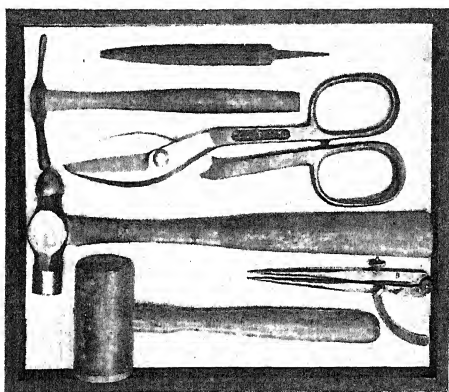


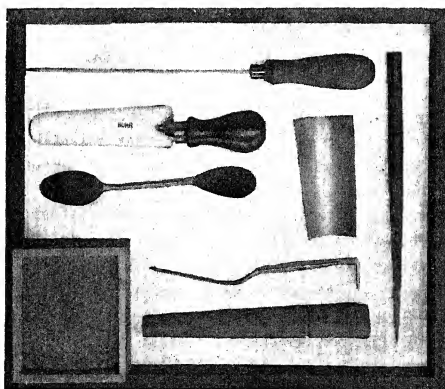
FIG. 15.—DESK FOR MECHANICAL DRAWING.

Such an arrangement, of course, means more teaching in the sense of more frequent repetition of instruction. It is, however, still easier as a method than the individual instruction not uncommon in situations not calling for such a lack of organization. It provides—and that is its chief reason for existence—a rational solution of the problem of metalwork in the smaller high schools, or in large high schools where manual training is not in demand by many students.

For general educational purposes, manual training in large high schools may still be outlined for the second year's work in the manner indicated. In such schools, however, it is possible by means of separate shops and instruction to shift the groups from shop to shop with highly expert instruction in each line. It will be necessary to make the number of weeks of subjects which change one with the other numerically equal. The reason for making the short shifts unequal in the number of weeks where one instructor has to teach the various kinds of work, is that it makes it easier for him to make the change, giving instruction in one set at the end of four weeks and in the other at the end of five weeks. With separate instructors for each subject this is not a factor.



*Sheetmetal tray and tools*



*Molding tray and tools*

FIG. 16

Lists of equipment are intended to be merely suggestive; it is possible to spend more or less according to local resources and needs. In the metalshop, for example, a brass furnace, which adds greatly to the value of the work so far as metallurgy is concerned, might be installed. However, the molding can be done as well and interest held where white metal or plaster Paris is used for casting. Where money is available the forges might be driven by a blower attached to the line shaft used in running the lathes, etc.

It is not advised that technical work should be installed, or any attempt made to teach it, except by a properly trained instructor. It is no more possible to teach manual training without special preparation than it is to teach any other subject under the same conditions. In fact, the opportunities for destroying faith in the educational value of shopwork, because the failures stand out so clearly in the form of financial loss, are greater than in any other line of educational endeavor. Such a trained teacher will know how to proceed in specifying equipment and securing estimates.

## Manual Training

### Minimum Bench Equipment

Bench, open frame without drawer, glued-up top 23 in. by 52 in., tool rack, rapid acting vise, approximate cost.....	\$10.00
Jack-plane, 14", each.....	1.85
Wooden mallet, round, hickory, 5"x3".....	.13
Rule, 2-foot.....	.17
Hammer, bellfaced claw, 13 oz.....	.50
Chisels, socket firmer, $\frac{3}{8}$ " and $\frac{3}{4}$ ", both .....	.85
Marking gage .....	.12
Trysquare, 7 $\frac{1}{2}$ ".....	.24
Backsaw, 12".....	1.10
Swedish sloyd knife No. 7.....	.40
Bench brush.....	.30
Benchhook . . . . .	.25
Chiselboard . . . . .	.00
Total list price.....	\$15.91

### Minimum Individual Equipment

1 jackplane single iron.....	\$ .25
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### Minimum General Equipment for Twenty Pupils

6 wing dividers, 6", each 23c.....	\$ 1.38
6 pencil compasses, each 15c.....	.90
6 nailsets, cup pointed, assorted size, each 10c.....	.60
6 try-squares, 12", each 36c.....	2.16
3 turningsaws and frames, 18", each \$1.00.....	3.00
6 spokeshaves, Bradshaw and Field or Stanley No. 84, 2 $\frac{1}{2}$ ", nut adjusted, each 59c.....	3.54



3 gouges, 1", No. 8, outside bevel, each 43c.....	1.29
2 ratchet braces, 8" sweep, each \$1.45.....	2.90
2 plain braces, 8" sweep, each \$1.08.....	2.16
3 crosscut saws, 22", 10 pt., each \$1.55.....	4.65
3 rip saws, 24", 8 pt., each \$1.65.....	4.95
2 planes, jointer, 22", each \$3.03.....	6.06
2 rosehead countersinks, each 23c.....	.46
2 screwdriver bits, each 17c.....	.34
4 screwdrivers, 4" blade, fluted handle, each 25c.....	1.00
2 auger bits, 1 $\frac{1}{4}$ ", each 80c.....	1.60
4 auger bits, 1", each 60c.....	2.40
2 auger bits, $\frac{3}{4}$ ", each 50c.....	1.00
4 auger bits, $\frac{1}{2}$ ", each 35c.....	1.40
4 dowel bits, $\frac{3}{8}$ ", each 27c.....	1.08
4 dowel bits, $\frac{1}{4}$ ", each 27c.....	1.08
4 dowel bits, 3-16", each 12c.....	.48
1 T-bevel, 8".....	.44
1 monkeywrench, 8".....	.50
1 pair combination pliers, 6".....	.40
2 combination India oilstones, 6"x2"x1", in iron boxes, each \$1.00	2.00
1 oilcan, $\frac{1}{4}$ pt., each 18c.....	.18
6 hand screws, No. 812, each 40c.....	2.40
2 steel bar carpenter clamps, 2 $\frac{1}{2}$ ft., each \$1.69.....	3.38
1 set steel figures, 3-16", each \$1.88.....	1.88
1 shellac can, 1 qt.....	.25
1 kerosene glue heater, 2-pts.....	1.50
1 steel framingsquare.....	1.00
6 copingsaws with blades, each 25c.....	1.50
2 bradawls, each 15c.....	.30
2 scribe awls, each 15c.....	.30
1 Pyko peerless dry emery grinder.....	6.00
1 Stanley combination plane.....	6.00
Total list price for general equipment .....	\$72.46

### Liberal Bench Equipment

Where money is available for individual edged tools, the benches best suited are of the cabinet type having drawers below in which each student may keep his individual edged tools. Such bench with drawers enough to accommodate all the boys that will be able to make use of the bench during the day, with a hinged or revolving board upon which may be fastened the general tools that belong to that bench, will cost approximately \$16.50. This includes a first class rapid acting vise. The following tools should be added to those specified for the minimum bench equipment:

Smoothplane, 1 $\frac{3}{4}$ " cutter, 8" long.....	\$ 1.66
Jointerplane, 2 $\frac{3}{8}$ " cutter, 22" long.....	3.03
Screwdriver, 6".....	.35
T-bevel, 6".....	.40
Combination India oilstone, 1"x2"x6".....	1.00
Oilcan .....	.18

Crosscut saw, 20", 10pt.....	1.40
Ripsaw, 22", 8 pt.....	1.55
Spokeshave, 2½" blade, Bradshaw and Field or Stanley No. 84....	.57
Total list price.....	\$10.14

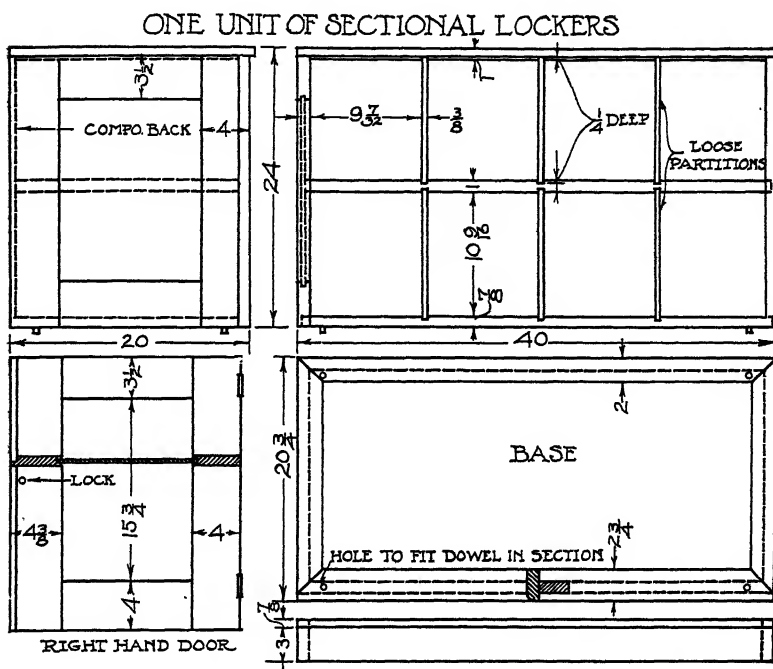


FIG. 17.—DETAIL OF LOCKER ARRANGEMENT

#### Liberal Individual Equipment

Provide for each drawer, that is, provide each boy with the following:

Chisel, 1", bevel edged, firmer socket.....	\$ .57
Chisel, ¾", bevel edged, firmer socket.....	.41
Chisel, ⅜", socket mortise.....	.40
Plane iron for jointer.....	.29
Plane iron for jackplane.....	.25
Plane iron for smoothplane.....	.23
Spokeshave iron.....	.15
Sloyd knife, 2⅝".....	.40
Total list price.....	\$ 2.70

This list presupposes that the mortising of the first year will be done by chisel alone; no boring. If mortises are to be bored first, it will be advisable to equip each bench with an 8" ball bearing brace, cost \$1.45.

### Liberal General Equipment for Twenty Pupils

In addition to the general tools specified for the minimum equipment, make the following changes and additions:  
Omit emery grinder, rip and crosscut saws, the plain braces in case the bench is so equipped, handscrews and clamps, and glue heater. Add these:

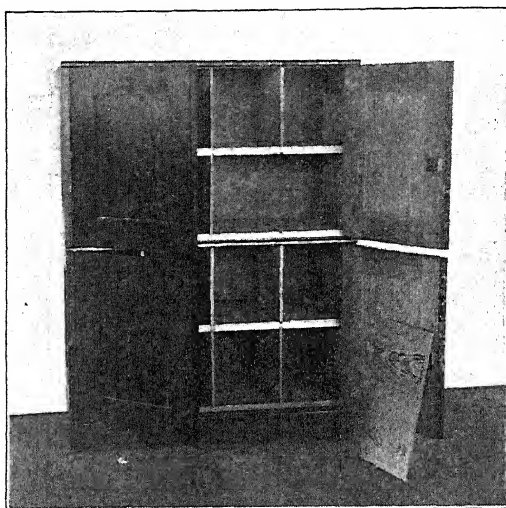


FIG. 18.—PERSPECTIVE OF LOCKER ARRANGEMENT

1 doz. handscrews, cost each 40c.....	\$ 4.80
2 doz. carpenters' clamps, wood bar, 2-ft., each 85c.....	20.40
1 doz. carpenters' clamps, wood bar, 4-ft., each 95c.....	11.40
1 set steel letters, 3-16", each \$1.88.....	1.88
1 steam or electric glue heater, each \$9.50.....	9.50
2 drawknives, 8", each 65c .....	1.30
½ doz. steel cabinet scrapers, each 10c.....	.60
1 set auger bits in box, each \$4.00.....	4.00
Electric grinder and motor.....	50.00
1 bandsaw and motor.....	150.00
<hr/>	
Total list price.....	\$253.88

Lockers for unfinished work will cost about \$4 per pupil and glue and varnish tables \$4.50 per running foot, according to the Montclair, N. J., system, which is highly recommended for convenience and completeness. Figs. 17 and 18.

About 10 per cent should be added to the cost of equipment for breakage and supplies unthought of.

## Mechanical Drawing

### For a Class of Twenty Pupils Working at the Same Time

20 drawing tables, top 40x26, cabinet style.....	\$240.00
20 sets of drawing instruments.....	70.00
20 T-squares (cherry).....	8.00
20 triangles, 45, 7".....	8.00
20 triangles, 30, 60, 7".....	7.00
20 white pine drawing boards, 20"x25".....	18.00
20 architects' triangular scales.....	8.50
20 irregular curves.....	9.60
Total list price.....	<u>\$269.10</u>

Each pupil should possess the following:

1 dozen thumb tacks.....	.05
1 pencil and ink eraser.....	.05
1 sponge eraser.....	.10
1 sketchbook, for pencil.....	.10
1 pencil, soft, finest grade, No. 2.....	.10
1 pencil, 4H, for mechanical drawing.....	.05
1 bottle Higgins' black drawing ink.....	.25

Drawing paper in large sheets, size 19x24, of good quality, for mechanical drawing, may be had from 2c to 5c per sheet.

(In many communities pupils are required to purchase instruments.)

## Equipment for Metalwork

### Bench Metal Work

Benches for 6 pupils, 2" lumber, 3' per pupil.....	\$ 25.00
6 Trojan vises, 3½" jaw.....	18.90
6 cold chisels, ¾".....	2.40
6 snips, No. 12.....	4.50
6 ball-pein hammers, No. 159, 12 oz.....	3.00
6 rawhide mallets, No. 4, 2" face.....	4.20
6 hammers (copper), No. 302.....	4.50
6 half-round Bastard files, 8".....	1.13
6 wooden hand vises.....	1.80
6 flat pliers, No. 1653A, 5".....	1.02
6 roundnose pliers, No. 1652A, 5".....	1.02
2 metal cutting shears, No. 5, 8".....	6.00
1 blowpipe (gas), No. 2, ¼" bore.....	2.00
1 footbellows, No. 24, 10x12.....	5.60
1 soft soldering outfit, No. 1.....	.75
1 soldering copper heater.....	1.60
2 Miller's Falls handdrill, No. 1.....	2.50
2 doz. drills, 1-16", 3-32", ½".....	1.00
6 jewelers' sawframes, No. 60, 4" deep.....	4.50
1 gross jewelers' saw blades.....	1.00
6 half-round, secondcut files, 6".....	1.20
6 prick punches.....	.90

6 stickers for perforating shades.....	.60
2 wire brushes .....	.70
3 Eagle pencil dividers .....	.75
1 doz. sheets emery cloth, No. 0.....	.40
3 riveting hammers, No. 121, 7 oz.....	1.05
3 planishing hammers, 8 oz.....	2.85
3 hammers, No. 305 .....	3.75
1 stake, No. 8.....	1.25
1 stake, No. 10.....	2.50
4 anvil heads, No. 202 .....	1.40
4 anvil heads, No. 203.....	1.40
2 anvil heads, No. 213.....	.70
6 stakes, No. 5.....	9.00
1 leveling block, about 40 lbs.....	2.00
1 can transparent lacquer, 8 oz.....	.50
2 camel's hair lacquer brushes, 7/8".....	.20
1 can asphaltum, 1/2-pt. ....	.25
1 set riveting tools .....	.75
1 doz. water color brushes, No. 2.....	.50
1 doz. water color brushes, No. 6.....	.50
4 burnishers, No. 91, 5".....	2.40
1 repousse tools pitchblock, with pitch.....	1.00
6 repousse tools .....	2.10
6 raising blocks of hard wood.....	.00
3 hammers No. 44 (T. K. Lewis Co., Columbus, O., Catalog).....	2.25
6 blocks of steel or iron 1/2" to 3/4" thick for riveting. ....	.00

Total .....\$133.32

Tools for copper work, etc., from Orr & Lockett, Chicago, except where otherwise specified.

#### Foundry and Forging

3 trowels, No. 1, 1 1/8" wide 5 1/2" long.....	\$ 1.08
3 bench lifters, No. 41, 5/8" wide.....	1.20
3 drawspikes .....	.15
3 sand riddles, 18", brass wire, 8 or 10 mesh to 1".....	3.00
3 sprue pins (to be made).....	
3 bench rammers, No. 199.....	1.80
3 split handle moulders' shovels.....	3.45
3 rapping irons, 1/2" square stock, 8" long.....	.25
3 bellows, 10".....	3.00
3 soft bench brushes, No. 8.....	.75
3 straightlip tongs, 20".....	.90
3 gad tongs, 20".....	1.35
3 bolt tongs, 1/2" stock, 20".....	1.35
3 round hand punches, 5/8" and 3/4".....	.60
1 heading tool, 5/8".....	.80
1 hot cutter, 1 3/4".....	.75
1 cold cutter, 1 3/4".....	.85
1 top swage, 1/2".....	.40

1 bottom swage, $\frac{1}{2}$ "	.50
3 camel's hair brushes, $\frac{3}{4}$ "	.30
2 barrels brass molding sand	4.50
1 handladle with shank, 1 gal.	1.00
3 Buffalo geared blower forges, No. 651	60.00
3 toolsteel-face anvils, weight 80 lbs.	18.00
3 machinist's hammers, $1\frac{1}{4}$ lb.	1.80
Ladles, skimmers, etc.	5.00

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Total .....\$112.78

Flasks may be made in woodshop at small expense or purchased at varying prices.

Gate cutters may be made from scrap metal.

Strikes and straight edges, 2 ft. long, may be made from scrap strips from woodshop.

Parting sand, a clean lake or river sand, may be easily procured or bought by keg.

If money for equipment is available, it is recommended that two additional groups be added: metal turning with power engine-lathes that cost from \$75 upward each, and tinsmithing. Light machines for tinsmithing may be bought as follows:

1 Columbian turning machine, No. 542	\$10.25
1 stovepipe former, 30", No. 2	18.00
1 folding machine, 30", No. 2A	7.00
1 bench shears, cut 8, $\frac{3}{4}$ ", No. 2	7.00

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\$42.25

## Metal Turning Equipment

### Individual Equipment

1 6" steel scale	\$ .50
1 6" dividers, solid nut	.50
1 6" outside calipers	.50
1 6" inside calipers	.50
1 $1\frac{1}{4}$ lb. ball-pein machinist's hammer	.60
1 60 deg. center gage	.40
1 center punch (to be made)	
1 straight Armstrong holder	1.80
1 left hand Armstrong holder	1.80
1 round nose boring tool (to be made)	
1 square nose boring tool (to be made)	
1 inside threading tool (to be made)	

---

Total \$6.60

### General Equipment

- 3 9" swing, engine lathes (bench type) compound rest, countershafts, necessary wrenches, etc.
- 1 3 H. P. electric motor.
- 18 ft. steel shafting, 1.7-16" diameter.

- 1 power hacksaw and 2 doz. blades.
- 1 sensitive drill press.
- 1 bench grinder with self contained motor.
- 2 doz. 3-32" by 5-16" combination center drill and reamer.
- 3 ½" lathe dogs.
- 3 1" lathe dogs.
- 3 1½" lathe dogs.
- 3 engine oil cans.
- 3 lard oil cans.
- 6 6" independent type, 4-jawed lathe chucks.
- 1 10" monkeywrench.
- 2 6" monkeywrenches.
- 1 12" hand hacksaw and 2 doz. blades.
- 3 bench brushes.

Necessary drills and special tools to suit exercises to be purchased or made.

Necessary shaft hangers, pulleys, and belting.

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## Part V. Selected Bibliography for Class Use and Reference

Note.—No attempt is made to include all suitable books in this list. A descriptive catalog of manual arts books may be had by addressing the Manual Arts Press, Peoria, Illinois. This catalog contains a list of the better books of all publishers, and any others not so listed will be forwarded at publishers' list prices.

Books marked L are laboratory manuals or project books; those marked T are recommended as textbooks for student use; those marked R are recommended for reference use.

### Woodworking

- Bench Work in Wood, Goss, Ginn and Co., Chicago. (T)
- Essentials of Woodworking, Griffith, Manual Arts Press. (T)
- Woodwork for Secondary Schools, Griffith, Manual Arts Press. (T)
- Modern Cabinet Work, Wells and Hopper, Manual Arts Press. (R)
- Wood and Forest, Noyes, Manual Arts Press. (R)
- Handwork in Wood, Noyes, Manual Arts Press. (R)
- Handcraft in Wood and Metal, Hooper and Shirley. Manual Arts Press. (R)
- Correlated Courses in Woodwork and Mechanical Drawing, Griffith, Manual Arts Press. (R).
- Problems in Woodturning, Crawshaw, Manual Arts Press. (T and L)
- Woodturning, Ross, Ginn and Co. (T and L)
- Beginning Woodwork at Home and School, Van Deusen, Manual Arts Press. (L)

Projects in Beginning Woodwork and Mechanical Drawing, Griffith, Manual Arts Press. (L)  
Advanced Projects in Woodwork (*Furniture Making*), Griffith, Manual Arts Press. (L)  
Problems in Farm Woodwork, Blackburn, Manual Arts Press, (L)  
Carpentry, Griffith, Manual Arts Press. (T)  
Furniture Making, Crawshaw, Manual Arts Press. (L)

### **Metalwork**

Forge Work, Ilgen, American Book Co. (T and L)  
Forge Practice, Bacon, John Wiley & Sons. (T and L)  
Foundry Practice, Palmer, John Wiley & Sons. (T)  
Foundry Practice, Tate and Stone, H. W. Wilson Co., Minneapolis. (T)  
Elements of Machine Work, Smith, Industrial Educational Book Co., Boston. (T)  
Machine Shop Practice, Kaup, John Wiley & Sons. (T)  
Art Metalwork, Payne, Manual Arts Press. (R)  
Handcraft in Wood and Metal, Hooper & Shirley, Manual Arts Press. (R)  
Mechanical Engineering and Machine Shop Practice, Moore, Hill Publishing Co., New York. (R)  
Practical Sheet and Plate Metal Work, Atkins, Whittaker & Co., New York. (R)

### **Mechanical Drawing**

Problems in Mechanical Drawing, Bennett, Manual Arts Press. (L)  
Notes on Mechanical Drawing, Mathewson, Taylor Holden Co., Springfield, Mass. (L)  
Mechanical Drawing, Phillips & Orth, Scott Foresman Co., Chicago. (T, R, L)  
Elements of Mechanical Drawing, Anthony, D. C. Heath & Co., Chicago. (T, R, L)  
Engineering Drawing, French, McGraw Hill Book Co., New York. (T, R, L)  
Effective Methods in Mechanical Drawing, Evans, Manual Arts Press. (T, R, L)  
Mechanical Drawing Conventions, Simpson, Manual Arts Press. (L)

### **Periodicals**

Manual Training and Vocational Education, Manual Arts Press.  
Industrial Arts Magazine, Bruce Publishing Co., Milwaukee.  
The various trade magazines.





# THE UNIVERSITY OF MISSOURI BULLETIN

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EDITED BY CHARLES H. WILLIAMS

## COUNTRY ROADS

PAPER NO. I.—ROAD DRAINAGE

BY

F. P. SPALDING

*PROFESSOR OF CIVIL ENGINEERING*



UNIVERSITY OF MISSOURI  
COLUMBIA, MISSOURI  
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# Country Roads

## Paper No. 1.—Road Drainage

The most important and difficult problem met in the maintenance and improvement of ordinary country roads is that of drainage. In order to maintain such a road in good condition it is necessary to prevent water getting into it so as to soften the material of which it is composed. Drainage is especially important when dealing with an earth road, because the surface material of the earth road is more susceptible to the action of water and its stability is more easily destroyed than that of a road composed of harder material. Dry, compact earth may carry quite heavy loads without yielding, but when thoroughly wet the earth becomes soft, losing coherence, and a weight readily sinks into it.

When the road surface is of harder material, such as gravel, the earth beneath the gravel must be kept dry. Water may not readily penetrate the surface, but the subsoil must be dry in order to support the gravel firmly and prevent the surface being broken through by the loads which come upon it. The ability of earth to sustain a load depends in a large measure upon the amount of moisture contained in it. Most earths form good firm foundations so long as they are kept dry, but when wet they lose their sustaining power, becoming soft and incoherent. When softened by water the subsoil may be easily displaced, thus permitting the foundation of the road to settle into it. The soft subsoil may also be forced upward into any open spaces existing in the superstructure, thus causing disintegration and resulting in destroying the solidity of the gravel surface.

### Kinds of Drainage

The drainage required upon a road may be either surface drainage or under drainage, according to the source from which the water comes. Water may reach the road in any one of four ways: (1) Rainfall upon the surface of the road, which can only be gotten rid of by keeping the surface properly smoothed and crowned; (2) surface water coming from the sides, which may overflow the road unless stopped by side drainage; (3) water seeping thru the ground from the sides, which may soak into and saturate the subsoil under the road; (4) water coming from underground sources in the form of springs under the base of the road itself.

In any case where the improvement of a wet and muddy road is being considered, the first thing necessary is to find out why it is wet

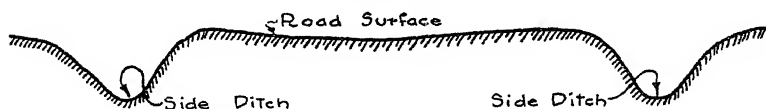
and where the water comes from. The effort should then be made to cut off the supply of water and prevent its reaching the road. It should always be kept in mind that the object of road drainage is not to draw water out of a wet road but to prevent the road getting wet. Surface drainage is always necessary. Under drainage is necessary where there is a chance for water to reach the subsoil beneath the road from underground sources.

### Surface Drainage

Drainage of the surface of a road is provided by making the section higher in the middle than at the sides with ditches or gutters at the edges of the road along which the water is conducted until it may be disposed of through some cross channel.

The slope necessary from the middle to the sides of the road to insure good drainage depends upon the character of the material of

Figure 1



Water will not pass through the dished road surface to the side ditches.

which the road surface is composed, being less as the road surface is more smooth and less permeable to water. For ordinary earth roads the slope varies from about one to one and a half inches to the foot; for macadam or gravel roads, about three-fourths inch to the foot. On an earth road eighteen feet wide, the surface of the road at the crown should usually be kept about nine or ten inches higher than at the shoulders.

In all cases it is important that the water which falls upon the surface of road should be gotten rid of as soon as possible, for so long as it remains upon the road, it is an element of danger, both from its tendency to wash the surface and from its liability to penetrate into the road and thus cause disintegration or settling. Side drains or under drains are quite useless as means of removing water from a flat or dished road surface. In a road shaped as in Figure 1 the deep side ditches will not drain the water from the road surface. The side ditches may be dry while the middle of the road is a deep mudhole. In order to drain properly, the surface of the road must be well crowned and it must be smooth enough to let the water which falls upon it flow immediately away.

The drainage of the surface of the country road is mainly a matter of maintenance and involves keeping the surface of the road in a smooth condition and properly crowned. The methods which may be employed for doing this will be discussed in separate papers upon the *Construction of Earth Roads* and upon the *Maintenance of Earth Roads*.

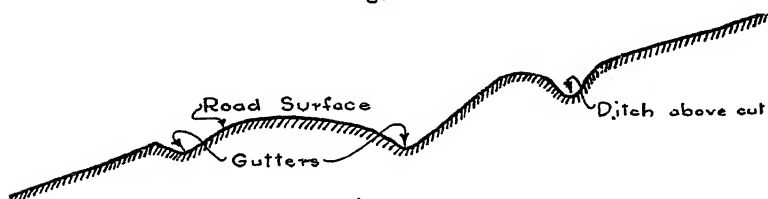
The disposal of surface water on country roads is usually effected by providing side ditches along the edges of the road. These receive

the water flowing from the road surface and carry it along the road to the first convenient cross channel into which it may be discharged.

Surface water coming from the ground at the sides of the road is usually caught by the side ditches and thus prevented from reaching the roadbed. The best arrangement for the side ditches and the shape which should be given them depends upon the local conditions surrounding the road and the amount of water to be carried by the ditches. In flat places ditches should be provided upon each side of the road, the bottoms of which are at least two feet lower than the crown of the road. It is desirable to make the side slopes of these ditches flat to facilitate ease in cleaning them and prevent washing by the water flowing in them.

The slope on the side of the ditch toward the road should not be steeper than about one foot to three feet. This would make it possible to cut the grass in the gutter with a mowing machine, and would not

Figure 2



be a source of danger to a vehicle which chanced to drive over the edge. The outside slopes should cut back to a slope of about one foot to one and a half feet, to prevent the material sliding into the ditch and clogging it.

In very flat country, where opportunities for frequently discharging the water from the ditches may not be found, considerable water may need to stand in the side ditches. In such cases the road should be graded up sufficiently to keep the crown of the road well above the surface of water at the side. The water should never stand within two feet of the height of the crown.

The ditches should have a grade of at least one foot in a hundred in order that the water may run freely through them and be quickly disposed of. The surface of the road also should not be on a level grade, but should have a lengthwise slope of not less than one foot in a hundred to permit water to drain out of any small ruts or inequalities of surface that prevent water from reaching the side ditches.

Where the road has been cut along a side slope down which water is apt to flow toward the road, a ditch should be dug on the slope above the cut as shown in figure 2, to prevent water flowing down the face of the cut. This will diminish the amount of water to be carried in the gutter at the side of the road, as well as save the face of the cut from unnecessary washing.

When the road is on a steep grade and in a cut and considerable water must be carried in the side ditches, it may be a matter of diffi-

culty to keep the ditches from being gullied and washed out at times of heavy rainfall. In such cases it may sometimes be necessary to put a pipe under the gutter into which the water may be run from the gutter at frequent intervals. When the ground slopes away from the road on one side as would usually be the case on hill roads, the water may be taken from the gutter on the upper side of the road and carried under the road in small pipe culverts placed at short distances apart. This will prevent the accumulation of sufficient water in the gutters to wash them out.

It is sometimes the practice of road men to cut gutters across the surface of the road on heavy grades to carry water from the upper side and prevent the road being gullied by water running down its surface. This practice should be avoided. The "thank you, ma'am", as it is called, is a serious obstruction to traffic, especially where there is much motor traffic.

Figure 3



### Mountain Roads

On a mountain road, where the side slopes are steep and the road also on considerable grade, the road surface should not be crowned, but should slope to a gutter at the inner edge of the road. This prevents the water from the road surface washing the bank at the lower side of the road. It is also safer for vehicles, which in roads so arranged have no tendency to slide to the outside of the road.

The arrangement for such a road is shown in figure 3. The slope of the road surface should be about one-half to three-fourths of an inch per foot of width. The bank in the cut above the road must be sloped back sufficiently to avoid danger of caving and stopping the gutter. In an earth cut this would usually require that the slope be not steeper than one foot to one and a half feet.

It is often difficult on such roads to prevent excessive erosion due to the water flowing in the gutter. Where the grade of the road is steep the water will flow with considerable velocity and, if considerable water gathers, the scour may be sufficient to wash out the gutter and cut the inner portion of the road. The water should be discharged from the gutter as often as possible. Sometimes culverts may be put in at short distances apart for this purpose.

When the grade is considerable, it may be necessary to pave the gutter in order to prevent great scour, even when the water is only carried short distances in the gutter.

### Under Drainage

The drainage of the subsoil under a road is intended to lower the level of the ground water in wet weather and prevent water from

subsurface sources reaching the roadbed. The necessity for under drainage and the method to be employed in any case depends upon whether the soil over which the road is being constructed is naturally wet or dry and whether the roadbed is so situated and formed as to give it natural drainage. The material of which the roadbed is composed is important because it determines to a large extent whether artificial drainage is necessary and also what method should be adopted for securing drainage.

Soils differ in their power to resist the percolation of water through them, in the rapidity and extent of their absorption of water with which they come in contact, in the extent to which water renders them soft and unstable, and in their power to retain moisture.

Light soil of sandy nature usually presents little difficulty in the matter of drainage, as, while it is easily penetrated by water, it is not retentive of moisture, which passes freely through it without saturating it unless prevented from escaping. If the natural drainage, therefore, has a fall away from a roadbed formed of such material, it will usually need no artificial drainage, and where subdrains are necessary they may be relied upon to draw the water from the soil to a considerable distance each side of the drain.

Sand is more firm and stable under loads when quite damp than if dry, although a fine sand saturated by water which is unable to escape may become unstable and treacherous.

Clays usually offer considerable resistance to the passing of water through them and are very retentive of moisture. As a rule, however, a clay soil does not absorb water readily and requires that water be held for some time in contact with it in order that it may become saturated. When saturated it is the most unstable of soils. A clay that when dry will stand in a vertical wall and support a heavy weight, when wet will lose all coherence and become a fluid mass. When water comes in contact with a bed of such clay, the outside becomes saturated and semi-fluid before the moisture penetrates into the interior sufficiently even to moisten it a few inches from the surface. Clay soil is, therefore, difficult to drain by removing the water after it has soaked in. Drainage for such material must be so arranged as to prevent water standing against the road and thus prevent its becoming saturated. As clay is comparatively nonabsorbant, water which may come upon its surface, if allowed to escape at once, will not penetrate into it and hence will not cause softening.

Between the extremes mentioned there are a great many varieties of soil which possess to a greater or less extent the characteristics of either or both. In applying a system of drainage in any case, careful attention should always be given to the characteristics of the soil as determining very largely the treatment to be used. When artificial subdrainage is necessary the drains should be located in so far as possible with a view to cutting off the supply of water before it reaches the roadbed. To accomplish this to the best advantage the local conditions must be observed, sources of the supply determined, and the nature of the under flow, if any exist, considered.

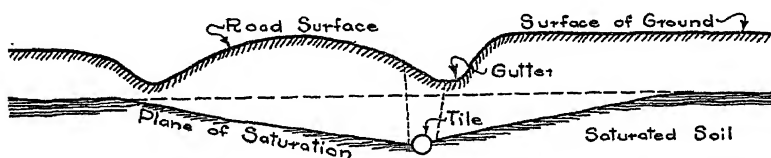


## Plane of Saturation

Natural soils contain open spaces which are filled with air or water. These open spaces commonly occupy about half the volume of the soil, being somewhat less for the coarse, open soils than for the finer and more retentive soils. Water from the surface of the ground sinks down through the openings in the soil until it reaches a depth below which the soil is already saturated so that no more water can be taken into it. The water then spreads out upon this surface, forming what we call the "plane of saturation".

In a flat country, underdrains are used for the purpose of lowering the plane of saturation where it lies so near the surface as to endanger the stability of the road. When an underdrain is placed below the plane of saturation, the water near the drain seeps into it and is carried away, and water upon each side flows toward the drain. This

Figure 4



Without the tile, the plane of saturation would be on dotted line

lowers the position of the plane of saturation for some distance upon each side of the drain.

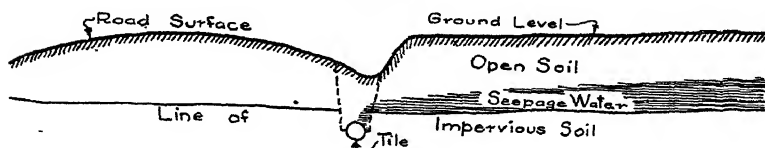
Water meets with some resistance in passing through soil and does not, of course, flow with the same freedom that it would in the open. It does not, therefore, come at once to a nearly level surface, but flows down a sloping surface toward the drain as shown in figure 4. The slope of this surface depends both upon the resistance met in passing through the soil and on the amount of water flowing. In open soils the slope of the plane of saturation will be quite flat and the tile will drain water from the soil for considerable distances on each side, while in the more retentive soils the slope will be steeper and the tile will be effective for a much less distance. Usually a single line of tile under the gutter or under the shoulder of the road upon one side will be sufficient to prevent the subsoil immediately under the road becoming saturated. In some instances, however, it may be found that in very retentive clay soils this is not sufficient and a second tile upon the other side of the road may be necessary. This can be determined only by experience. If the tile on one side of the road is found insufficient the second one may be put in.

For road drainage the capacity of the drain should be such as to take away all the water that may sink into the ground for a reasonable width on each side as fast as it enters the ground. Usually it will be safe to consider an area of about twenty-five feet on each side of the

drain as contributing water during wet weather. In ordinary soil the effect of the tile will be felt much further than this, but the water will reach the tile very gradually on account of the slow percolation through the soil. As a reasonable maximum it may be assumed that about an inch of water over this area every twenty-four hours may need to be removed.

This method may serve as a guide in selecting the size of tile required, but is not capable of accurate computation and is only of value as an aid to judgment. Good practice in such work must rest mainly upon the judgment derived from experience. If the tile is supposed to carry water from about twenty-five feet on each side, it would drain an area of about an acre for each 870 feet of length or about six acres per mile. Assuming one inch in twenty-four hours as the amount to be provided for, one acre will yield about 3630 cubic feet per day, or two

Figure 5



and one-half cubic feet per minute. One mile of length fifty feet wide will yield about fifteen cubic feet per minute. A drain should then be provided which would carry this amount of water. An estimate of the proper size is given in a following paragraph.

The drainage of a road is sometimes important on account of danger from freezing. Frost has no effect on dry materials and hence is an element of danger only in a road that becomes wet. A road with a firm surface may be broken up by the freezing of a wet subsoil. When freezing occurs, the water expands, thus lifting the surface out of place. When thawing takes place, the soft subsoil settles back, but the surface does not return evenly to its former position, and is forced out of shape and broken through by the loads coming upon it.

In some instances, also, roads which are dry when frozen may have water forced into them when thawing takes place. This is due to hydrostatic pressure caused by the inability of the water to escape through the frozen ground. Such conditions may commonly be corrected by the use of underdrains at the points affected.

#### Underground Flow of Water

When a somewhat open surface soil rests upon a layer of less pervious material into which water does not readily pass, there is frequently a well defined flow of water through the surface layer following down the slope of the impervious layer.

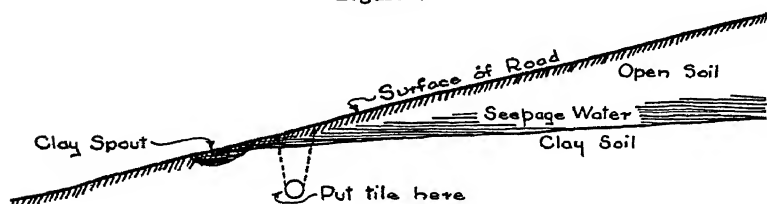
In the case of a road along a slope, this may produce a seepage of water from one side to the subsoil under the road. This condition is shown in Figure 5.

In such a case, a drain must be put along the upper side of the road to catch this seepage and prevent its reaching the base of the road. The water which soaks into the ground above the road then passes downward until it reaches the line of the less pervious soil and seeps through this soil, following this line until it reaches the drain.

When a hill road crosses the outcrop of a hard impervious strata with open soil above it, as a layer of clay or rock cropping out from under a hill, the seepage water may come to the surface under the road. This results in what is commonly known as a clay spout. Figure 6 shows such a condition.

To drain such a spot properly it is necessary to place a drain across the road a short distance above the point where the water comes out of the ground. This will cut off the supply of water before it reaches the base of the road.

Figure 6



To avoid danger of injury to a road from subsoil water, the plane of saturation should be kept at least three feet below the surface. In places where the subsoil becomes saturated nearer to the surface than this, the road will be benefited by subsoil drainage. Where the natural drainage is such that the plane of saturation is always at a greater depth, there is no need for underdrainage.

The necessity for underdrainage in any particular case can only be judged by careful examination of the locality in the light of experience. When it is found that surface drainage is not sufficient and the base of a road is wet notwithstanding proper attention has been given to the drainage of the surface, a study should be made to find the source from which the water comes. An underdrain may then be built to catch this water before it gets into the road. Keeping the surface of the road in shape and taking care of the surface water must always be looked after. No amount of underdrainage will be of any use without this.

Water should not be carried for long distances in underdrains when it is possible to discharge them at frequent intervals. On side slopes where drains may sometimes be needed for considerable distances, outlets may usually be provided by carrying the tile across, under the road, to the lower side.

## Tile Drains

Tile drains for road drainage are constructed in the same manner as for land drainage. Ordinary porous tiles are used as in farm drainage, sizes from four to eight or sometimes ten inches being commonly employed for this purpose. They are usually in length slightly more than twelve inches, the excess of length being sufficient to allow for possible breakage so that estimates may be made on the basis of one tile to each foot of length. The tile to be used should be well burned and hard enough to give a clean ring when struck. They should be truly cylindrical with the ends cut square and should be smooth inside. They should be uniform in size so that they can be laid in a smooth line on the inside. Vitrified tile are burned at a higher temperature and are stronger and more durable than the common tile. Vitrified tile should be used in any position where they may be exposed to the action of the weather. Tiles are designated by the size of the inside diameter as four-inch tile, six-inch tile, etc.

### Size of Tile Required

For road drainage the size of tile should be such as to provide liberal capacity. Comparatively small sizes will usually be required and the differences in cost are slight. A tile for road drainage should not be less than four inches in diameter. While a smaller tile may often be large enough to carry the water, the danger of clogging is much greater and the effect of inequalities in grade is increased for such tile.

The size of tile needed in any particular case depends upon the quantity of water to be carried and the slope of the tile. The velocity of water through a tile depends upon the slope of the tile. Considerable water may be carried by a tile laid to an almost level grade. Such grades are to be avoided whenever possible and are seldom necessary in road drainage. It is not desirable, except under unusual conditions, to use a grade of less than two inches per one hundred feet. Except for small tile this gives a velocity which may reasonably be expected to keep the tile clear, when properly laid, altho a greater slope is to be preferred when obtainable.

Care should be used in laying tile to place it accurately to the grade line, particularly when the slope is slight. Irregularities are apt to produce depressions in which deposits of silt may take place.

The water carrying capacity of tile drains has not been accurately determined, but it probably does not differ greatly from that of vitrified pipe sewers and the formula usually applied to sewers will be sufficiently accurate for practical purposes. The following table shows approximately the amount of water in cubic feet per minute that a carefully placed tile drain may be expected to carry when laid to various slopes.

Capacity of Tile Drains in Cubic Feet per Minute

SLOPE PER 100 FEET		SIZES OF PIPE			
Inches	Feet	4 inches	6 inches	8 inches	10 inches
		Cubic Feet per minute			
2	.17	4.0	12.0	27.0	49.5
4	.33	5.5	16.5	38.0	70.0
6	.50	6.6	21.0	46.5	86.5
9	.75	8.0	25.5	57.5	106.5
12	1.00	9.5	29.5	66.0	122.5
24	2.00	13.5	41.5	92.5	173.0
36	3.00	16.5	51.0	114.0	212.0
48	4.00	19.0	59.0	132.0	245.0
60	5.00	21.0	66.0	148.0	275.0

Tiles laid on very flat slopes sometimes may carry a quantity of water larger than the capacity due to the slope. This is caused by the level of ground water standing above the tile, thus causing the water to flow in the tile under a head greater than that due to its slope. Where gravel or other porous material is available such tile will be benefited by a porous filling immediately over the tile. This also assists in keeping the tile clear of sediment.

#### Laying the Tile

In laying tile drains the tiles are placed in the trench about three feet below the surface of the ground with their ends in contact. They should be carefully placed so that the ends fit closely, and the bottom of the trench should be cut to about the width of the tile so that they cannot move sideways when the trench is filled. Or better still, a groove may be scooped out of the bottom of the trench to fit the tile. The trench may be excavated to a depth of about two or three inches above the grade of the bottom of the tile, and then a curved channel to fit the tile scooped out of the bottom of the trench. This makes it possible to place the tile accurately and prevents their getting out of line when the trench is refilled. Small tile can usually be laid in the trench with a tile hook if the bottom of the trench fits them closely. They should in all cases be so placed that the ends are in close contact, forming a straight line and a uniform grade. Where the direction changes, long curves should be used and all sudden crooks avoided.

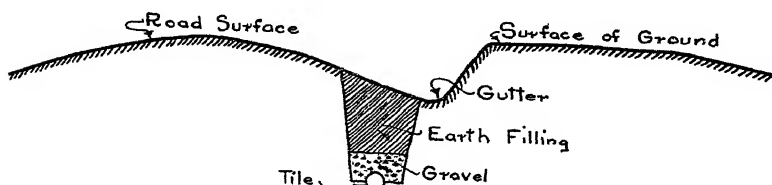
When the tiles have been properly placed in the trenches they should be carefully covered with enough earth to hold them in place so that there is no danger of displacing them in filling the trenches. When gravel or other similar material may be obtained, the efficiency of the drain may sometimes be increased, particularly in retentive soils,

by filling a portion of the trench, immediately over the tile, with gravel as shown in figure 7. This permits the water in the soil upon the sides of the trench to pass more readily to the tile and also protects the tile against possible washing of fine material into it.

When the filling is of fine sandy character, or when the tile is laid upon a very flat grade, it is desirable to protect the joints by covering them so that no fine material can pass through them. Coarse grass, cloth, or tarred paper may be used for this purpose. When the slope is very slight any material which passes through the joints is apt to be deposited in the tile, as the velocity of the water through the tile will not be great enough to keep it clear.

Porous tile, four inches in diameter, can usually be obtained in most localities in Missouri at from three cents to five cents per foot.

Figure 7



The cost of laying the tile varies with the material in which the trench must be dug. In ordinary soil, a tile spade with narrow blade about eighteen inches long may be used in digging the trench, the whole depth being taken out in two cuts. The trench may be about twelve inches wide at top for four-inch or six-inch tile. The cost of laying and filling trench may vary from about three cents to six cents per foot for a depth of three feet. The total cost of tile in place under those conditions should be from six cents to ten cents per foot of length. A six-inch tile would usually cost from two cents to four cents more than the four-inch.

Where harder materials are encountered in the trenches, the cost will be increased in proportion to the difficulty of excavation.

### Stone Drains

In localities where stone suitable for such purposes exists along the roadway, it is common and often economical to use stone drains. For short lengths where it is only necessary to provide a permeable path for a small amount of water to escape, blind drains may be used. They consist of ditches cut into the soil and filled at the bottom with fragments of stone, the trench then being filled with earth. Care should be taken that the top of the stone is protected so that the earth may not wash into the stone and stop the drain. A layer of small sized stone or gravel on top, or a layer of brush or sod to hold the earth until it is compacted is useful. Such drains have often proved quite efficient when used where the requirements are not too great.

When suitable stone is plentiful and cheap, a box drain may be built. This consists of a rectangular box formed of flat stones at the bottom of the trench, which is then filled with earth. This box may be very roughly built and it is desirable when stone or gravel is plentiful to fill immediately over the drain with such material to protect it against the entrance of earth and assist in leading water into it. The size of the opening in a stone drain must be considerably larger than that in a tile to carry the same amount of water, the construction usually being very rough and the resistance to flow greater. Drains of this type are used in many localities where materials are available for building them, although their use is getting less, due to the fact that porous tile costs so little and that tile drains are so easily constructed.

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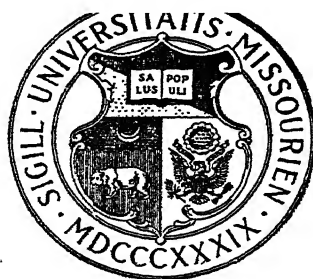
EDITED BY CHARLES H. WILLIAMS

## COUNTRY ROADS PAPER NO. II.—CULVERTS

BY

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# Country Roads

## Paper No. II.—Culverts

Culverts are commonly used in road construction for carrying water from one side of the road to the other. The average country road requires many such structures, and frequently the cost of maintaining them takes a large part of the available road funds, leaving but little for other work. It is therefore highly important that the culverts be built in such a manner as to reduce this maintenance charge as much as possible.

The construction of cheap, perishable culverts is usually expensive in the long run. Considerable saving in road funds and much improvement in the usefulness of a road have often resulted from replacing a poor class of culverts with a more permanent type of construction.

### Wooden Culverts

The ordinary wooden culvert is a highly undesirable structure. The life of such a culvert is usually not more than three or four years, and while in use it is a source of continual annoyance and expense.

These culverts are usually built with the top of the culvert level with the roadway, and as the wear upon the road surface is not the same as that upon the culvert top, the culvert soon becomes an obstruction to traffic. It is not uncommon to find these culverts, even on otherwise fairly well-kept roads, several inches above the general surface of the road.

In times when wood was cheap and plentiful, and other materials for such structures scarce and expensive, this type of culvert may have been the best available and its use quite proper. At present, however, it is costly and wasteful, as well as unsatisfactory to the users of the road, and should be abandoned.

### Vitrified Pipe Culverts

When a culvert of small opening is needed, vitrified-clay pipe makes a satisfactory as well as a comparatively cheap culvert. For openings from 12 to 24 inches in diameter, vitrified pipes may often be used economically. It is not usually desirable to build a culvert less than 12 inches in diameter. For those larger than 24 inches concrete will usually be found more suitable, although vitrified pipes 30 and 36 inches in diameter are sometimes used.

Vitrified pipes cannot safely be used where they are directly exposed to the shocks of traffic, and many failures of such culverts have been due to this cause. They should be protected by at least two feet of filling, and the roadway should be graded that a vehicle may pass smoothly and without shock over the culvert.

It is also highly important that provision be made for the ready escape of the water on the side of the road below the culvert, so that water will not stand in it.

The best quality of double strength, salt glazed sewer pipe should be used for culverts. These pipes are commonly made in lengths of 24 or 30 inches and diameter from 12 to 36 inches, with socket joints. They should be sound and well burned, giving a clear ring when lightly struck with a hammer.

*Laying Pipe.*—In laying vitrified pipe, it is desirable that the bottom of the trench be rounded to fit the pipe, and that depressions be dug for the sockets. The pipe should never be supported on the sockets.

The pipe should be laid from the down stream end with the sockets up stream. Care should be used to secure a uniform grade, and a smooth inner surface, with a grade of not less than 4 inches in 20 feet.

The joints should be filled with Portland cement mortar. This is particularly important where the pipe is likely to flow full, or under pressure, as it will prevent the water being forced out and the earth being washed from around the pipe.

In filling the trench, the earth should be carefully packed about the sides of the pipe, so as to support it firmly on all sides, and prevent any subsequent settling.

The cost of vitrified pipe varies widely with the conditions of trade, and with the expense for freight and haulage to the site of the work. The cost of laying the pipe depends upon local conditions, and upon the way in which the work is handled. The following table gives areas, weights and rough averages of costs in a number of localities in Missouri.

**Table I—Approximate Dimensions, Weights, and Costs of Vitrified-clay Pipe Culverts**

Inside Diameter, Inches .....	12	15	18	24
Area Opening, square feet .....	0.78	1.26	1.76	3.14
Weight of Pipe, lbs. per foot .....	52	70	100	175
Cost of Pipe, per foot .....	0.40	0.50	0.75	1.20
Cost of Laying .....	0.40	0.60	0.75	1.25

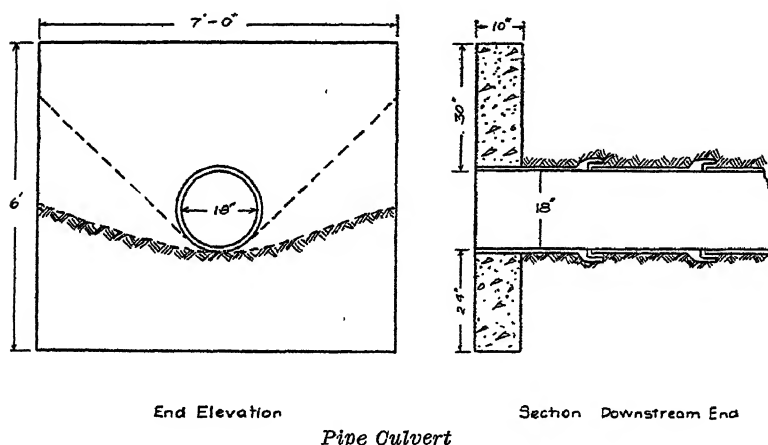
*End Walls.* Walls should always be constructed at the ends of pipe culverts. Figure 1. shows the arrangement of such a wall.

These walls should extend at least two feet below the bottom of the culvert to prevent water passing under the culvert and under-

mining it. They should also reach above the surface of the roadway, thus serving as a protection both to the culvert and to the road.

Table 2 gives dimensions that may be used for concrete end walls for a vitrified pipe culvert with the volume of concrete required for the two walls.

Figure 1.



### Cast-Iron Culverts

Cast-iron pipe has the advantage of resisting the shocks of traffic better than the other materials commonly employed for culverts. It may be used with less covering and is a suitable material where

Table 2—Concrete End Walls for Pipe Culvert

Diameter of Pipe, Inches .....	12	15	18	24
Thickness of Walls, inches .....	10	10	10	10
Height of Walls, ft. inches .....	5-6	5-9	6-0	6-6
Length of Walls, ft. inches .....	5-0	6-0	7-0	9-0
Concrete in 2 Walls, cu. yds. ....	1.7	2.1	2.5	3.4

the culvert may be subject to specially severe service. It is also durable in use, lasting well when buried in the ground.

Cast-iron culverts are not extensively used in highway work, on account of their high cost. They also have the disadvantage of being heavy to handle.

Ordinary cast-iron water pipe, in lengths of 12 feet is sometimes used. Special culvert pipe in lengths of 3 or 4 feet is also now available. These pipes are made lighter than the water pipe, some of them being made with a thinner shell reinforced by ribs. They are also sometimes made in longitudinal sections to be bolted together.

Cast iron culverts may be constructed in the same manner as vitrified-clay pipe culverts. They require end walls to support the fill and prevent seepage of water underneath.

### Corrugated Metal Culverts

Corrugated metal pipe is made much lighter than cast iron, and does not ordinarily differ greatly in price from clay pipe. It is rather easy to handle and is less likely to break under shocks than vitrified pipe. It should, however, be covered by a thickness of at least six inches of road material.

The life of a culvert of this kind depends upon the ability of the metal to resist rust. Wrought iron is much better than steel in this respect, but must be selected with special reference to its rust resisting qualities. Pipes made of a nearly pure iron have given good results, although numerous failures have resulted from the use of improper material.

### Concrete Culverts

Concrete is, in most cases, the best material for use in the construction of highway culverts. When properly constructed, these culverts last indefinitely, and are usually lower in first cost than other materials of durable character. It is essential in work of this kind that good materials be used, and that careful work be done. Failures have often resulted from lack of proper care in the proportioning and placing of the materials by inexperienced men.

*Materials for Concrete.*—Concrete as usually employed in structures of this kind consists of a mixture of Portland Cement, sand, and broken stone or gravel.

The cement to be used should be a high grade Portland Cement, which meets the specifications of the American Society for Testing Materials.

The sand should be clean and coarse, containing but little clay or loam, and free from other foreign matter.

The stone or gravel should be hard and tough—all sand and dust should be screened out in order that the final mixture may contain the correct proportion of coarse materials. The sizes needed in the concrete depends upon the exact nature of the work. In reinforced work, or when the concrete is to be but a few inches thick, the sizes may range from about  $\frac{3}{8}$  inch to 1 inch, all stones larger than these being screened out. In thicker and more massive work, as in abutments or wing walls, the larger stones may be 2 inches in diameter, the range being from about  $\frac{1}{2}$  inch to 2 inches.

To make first class concrete, the mixture should be such that all the spaces in the sand are filled with cement paste, and all the spaces in the stone or gravel are filled with mortar.

In practice, the proportions usually employed are 1:2:4:—consisting of one part cement, 2 parts sand, and 4 parts broken stone. This mixture is used where the greatest strength is needed, as in reinforced work, and in box and barrel culverts. A mixture of 1:2½:5 is commonly

used for abutments and walls, while 1:3:6 is frequently used in heavy walls and footings.

In proportioning concrete the sand and stone are measured, while the cement should be taken by weight, 100 pounds of cement may be taken as a cubic foot, or sometimes a sack of cement (94 lbs.) is used as a cubic foot. In doing contract work, the weight to be taken as a cubic foot should be specified.

In small culvert work, the mixing must usually be done by hand, and care must be used to get a good mix. In mixing by hand, a tight platform should be used, about 10x12 feet. The sand should be spread on the platform and the cement spread over it. These are then thoroughly mixed dry, until a uniform color is obtained. Water is then added, and the mass worked into a thin mortar. The stone is spread upon this and the mass is turned with shovels until all the stone is thoroughly coated with mortar.

The quality of the concrete depends largely upon the thoroughness of the mixing. The concrete should be placed immediately after mixing. It is best to place it in layers of about six inches and tamp well. The portion next to the forms should be spaded back so as to prevent the formation of porous places upon the surface of the concrete.

The quantities of materials required to make a cubic yard of concrete vary with the character of the sand and stone used. Table 3 gives approximate values for ordinary materials, taking 100 lbs. of cement as a cubic foot.

Table 3—Proportions of Materials for Concrete

Proportions			Materials for one Sack Cement			Quantities for one Cubic Yard		
Cement	Sand	Stone or Gravel	Cement	Sand	Stone or Gravel	Cement	Sand	Stone or Gravel
			Sack	CuFt	Cu. Ft.	Barrel	C.Yd	Cu. Yd.
1	2	4	1	1.9	3.8	1.6	0.45	0.90
1	2½	5	1	2.4	4.8	1.3	0.46	0.92
1	3	6	1	2.8	5.6	1.15	0.48	0.96

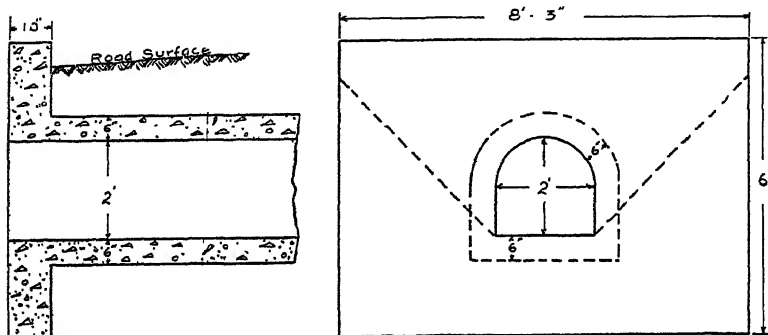
*Reinforcement.*—When a load is brought upon a beam or a flat slab, the tendency to bend the beam downwards causes the top of the beam to shorten and the lower side to lengthen. The material of the beam must be able to resist these elongating and shortening stresses. Concrete is a good material to resist the compression on the top, but it does not efficiently resist the tensile stress at the bottom. Hence it is customary to put steel rods through the concrete beam on the lower side to take this pull.

It has been found experimentally that concrete adheres firmly to steel imbedded in it, and that by proper arrangement of the design, the

full strength of the steel may be developed. Plain round or square steel rods may be used. There are, however, several forms of deformed bars, which may readily be obtained and which give added security against the bar pulling out of the concrete.

In placing reinforcements in beams or slabs, it is essential that these reinforcements be placed in the exact position for which they are designed. If they get out of place in the process of construction the two materials may not act together and failure may result. This often occurs in concrete structures when great care is not used to do the work right.

Figure 2.



Section Across Road

End Elevation

### *Concrete Barrel Culvert*

#### Concrete Barrel Culverts.

For small openings, plain barrel or arched culverts are frequently economical and easy to construct. These may be made circular in form, or better of the form shown in figure 2.

These culverts must always be placed upon a foundation of solid earth, to furnish uniform support to the bottom of the culvert. The ends must be protected by walls extending at least two feet below the bottom of the culvert, and reaching high enough to project a few inches above the road surface. The surface of the road should be at least 8 to 12 inches above the top of the concrete in the arch of the culvert.

Table No. 4 gives dimensions which may be used in the construction of such culverts, together with the approximate quantities of concrete required in their construction.

#### Small Concrete Box Culverts

For small openings, concrete box culverts with plain concrete sides and bottom and reinforced concrete top may be used. A culvert of this type is shown in figure 3.

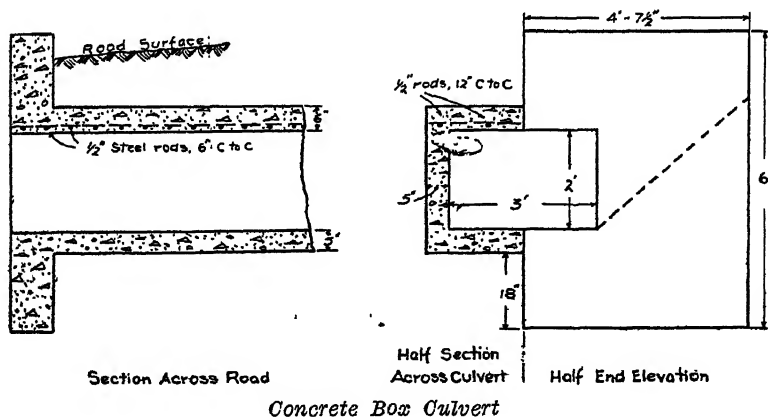
These culverts are constructed in the same manner as barrel culverts, and require the use of end walls. Dimensions suitable for use in building box culverts for ordinary country roads are shown in table 5.

Table 4—Dimensions for Small Arch Culverts

Barrel			End Walls			
Diameter of Opening	Thickness of Concrete	Concrete in L'gth of 1 foot	Width	Height	Thickness	Concrete in 2 walls
Inches	Inches	Cu. Yds.	Ft.In.	Ft. In.	Inches	Cu. Yds.
12	4	0.06	4 9	5 0	10	1.40
15	5	0.10	5 9	5 3	10	1.80
18	5	0.11	6 6	5 6	10	2.10
24	6	0.17	8 3	6 0	10	2.85
30	7	0.20	10 0	6 6	12	4.50

In constructing these culverts it is essential that the reinforcement be placed accurately in the position indicated. The center of the steel rods for the main reinforcement is intended to be  $1\frac{1}{2}$  inches from the bottom of the slab.

Figure 3



It is also important that in placing the concrete, all the spaces about the reinforcement be thoroughly filled with mortar, and that the iron be everywhere coated with mortar.

#### Short Slab Bridges

For openings more than four feet in span, reinforced concrete slabs resting upon plain concrete abutments may be used. These



abutments must rest upon firm earth, and should extend at least 18 inches below the bed of the stream. This arrangement is shown in figure 4.

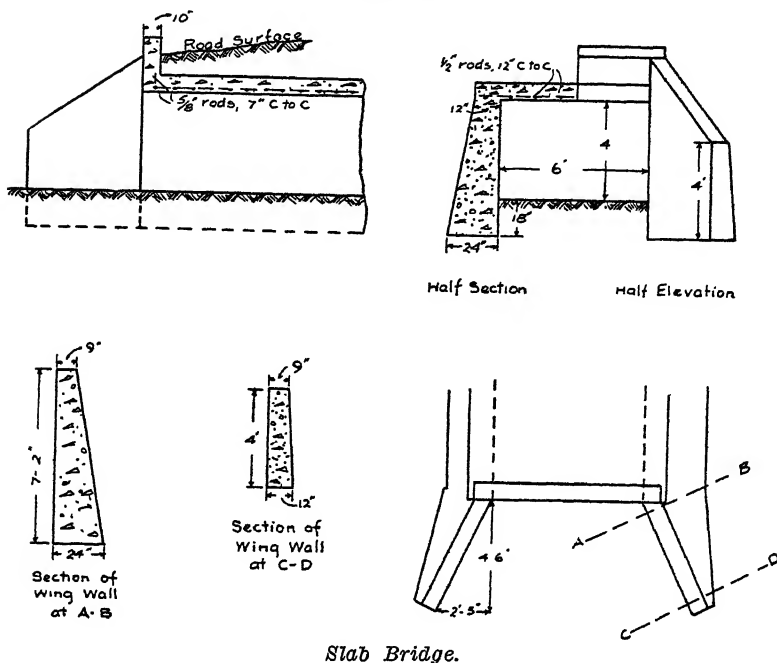
Table 5—Concrete Box Culverts

Size of Opening:		2	2	2½	3	3	4	4
Span, feet .....	1½	2	2	2	2	2	2	3
Height, feet .....								
Top Slab:		5	5	5½	6	6	7	7
Thickness of Concrete, inches .....								
Reinforcement Crosswise*:								
Diameter of Steel Rods, inches ....	½	½	½	½	½	½	½	½
Spacing of Rods, c. to c., inches ....	8	8	7	6	6	6	5½	5½
Length of Rods, feet, and inches...	2-8	2-8	3-2	3-10	3-10	3-10	4-10	5-0
Reinforcement Lengthwise:								
Diameter of Steel Rods, inches ....	½	½	½	½	½	½	½	½
Spacing of Rods, c. to c., inches ...	12	12	12	12	12	12	12	12
Bottom and Sides:								
Thickness of Concrete, inches .....	5	5	5	5	6	6	6	7
Quantities per Foot of Length:								
Concrete, cubic yards .....	0.14	0.15	0.18	0.20	0.26	0.26	0.28	0.36
Steel, pounds .....	4.67	4.67	5.63	7.79	7.79	7.79	10.08	10.36
End Walls:								
Length, feet and inches .....	7-0	8-3	8-9	9-3	12-0	12-0	10-3	13-0
Thickness, inches .....	10	10	10	10	12	12	10	12
Height, feet and inches .....	5-6	6-0	6-0	6-0	7-0	7-0	6-0	7-0
Concrete in Two Walls, cu. yds. ....	2.60	2.80	2.95	3.10	5.60	5.60	3.30	5.85

\*The reinforcement for the top slab is intended to be placed 1½ inches above the bottom surface of the slab.

The reinforcement in these slabs is placed with the center of the steel rods  $1\frac{1}{2}$  inches above the bottom of the slab. One-half inch rods,

Figure 4



Slab Bridge.

spaced 12 inches apart, extend across the road the full length of the culvert and are turned up into the end walls. Wing walls, placed at an angle of  $30^\circ$  with the center line of the culvert, are used to retain the bank of earth on the sides, and are much cheaper than walls parallel to the roadway. End walls are used to retain the fill over the culvert, and act as guards at the sides of the road.

Table 6 gives data concerning the slabs and abutments while table 7 gives dimensions and quantities for the end walls and wing walls.

#### Area of Waterway Required

The waterway provided by a culvert must, for safety, be sufficiently large to pass the maximum flow of water that is likely to occur, while for economy it should be made as small as possible. There are at long intervals, in most localities, records of storms of extraordinary character, to provide for which would need large increase of capacity in the culverts and add greatly to their cost. These unusual storms can hardly be taken into account in the design of the structures. Effort should be made, however, to provide for any flow of water that may reasonably be anticipated. The maximum flow of a stream depends

Table 6—Small Slab Bridges

Size of Opening:									
Span, feet .....	4	4	5	5	6	6	8	8	8
Height, feet .....	3	4	3	4	5	4	5	4	6
Top Slab:									
Thickness of Concrete, inches .....	7	7	7½	7½	7½	8	8	10	10
Reinforcement Crosswise:									
Diameter of Steel Rods, inches .....	½	½	⅝	⅝	⅝	⅝	⅝	⅝	⅝
Spacing of Rods, c. to c., inches .....	5½	5½	7½	7½	7	7	7	5½	5½
Length of Rods, feet, inches .....	5-6	5-6	6-6	6-6	6-6	7-8	7-8	9-8	9-8
Reinforcement Lengthwise:									
Diameter of Steel Rods, inches .....	½	½	½	½	½	½	½	½	½
Spacing of Rods, c. to c., inches .....	12	12	12	12	12	12	12	12	12
Quantities per Foot of Length:									
Concrete, cubic yards .....	0.12	0.12	0.16	0.16	0.16	0.20	0.20	0.31	0.31
Steel, pounds .....	10.	10.	13.5	13.5	13.5	17.1	17.1	26.7	26.7
Abutments:									
Thickness at Top, inches .....	10	10	10	10	10	12	12	12	12
Thickness at Bottom, inches .....	24	24	24	24	30	24	30	30	36
Height, feet and inches .....	4-6	5-6	4-6	5-6	6-6	4-6	6-6	5-6	7-6
Concrete per Foot, cu. yds.....	0.47	0.53	0.47	0.53	0.80	0.50	0.84	0.71	1.10

Table 7—End Walls and Wing Walls for Slab Culverts

Size of Opening			End Walls			Wing Walls								
Span	Height		Length	Height	Thickness	Quantity Concrete in 2 walls	Section at Culvert			Section at End			Quantity Concrete in 4 Walls	
feet	feet		ft.-in.	feet	in.	cu. yds.	Top	Height	Thickness	Top	Bottom	Top	Bottom	
4	3		5-8	2	9	0.6	ft. in.	ft.-in.	in.	in.	ft.-in.	in.	in.	cu. yds.
4	4		5-8	2	9	0.6	4-6	6-1	9	24	3-6	9	16	3.9
5	3		6-8	2	9	0.8	5-0	7-1	9	27	4-2	9	18	5.6
5	4		6-8	2	9	0.8	4-6	6-1	9	24	3-6	9	16	3.9
5	5		6-8	2	9	0.8	5-0	7-1	9	27	4-2	9	18	5.6
6	3		7-8	2½	10	1.2	6-0	8-1	9	30	4-6	9	18	8.0
6	4		7-8	2½	10	1.2	4-6	6-2	9	24	3-6	9	16	3.9
6	5		7-8	2½	10	1.2	5-0	7-2	9	27	4-2	9	18	5.6
8	4		9-8	2½	10	1.5	6-0	8-2	9	30	4-6	9	18	8.0
8	5		9-8	2½	10	1.5	5-0	7-4	9	27	4-2	9	18	5.6
8	6		9-8	2½	10	1.5	6-0	8-4	9	30	4-6	9	18	8.0
							7-6	9-4	9	36	5-0	9	21	13.2

upon a number of local conditions, most of which are very difficult of accurate determination. Among these are the following: The maximum rate of rainfall, the area drained by the stream, the shape and character of the surface drained, and the nature and slope of the culvert channel.

A number of formulas have been proposed for the purpose of aiding in estimating the probable quantity of water from a given area, or the size of opening required for a given area.

The following table gives roughly the sizes of openings required for different areas, computed from the formula of Professor A. N. Talbot.

Area Drained	Area in Square Feet of Waterway Required.		
	Steep Slopes	Rolling Agricultural Country	Level Country
Acres	Sq. Ft.	Sq. Ft.	Sq. Ft.
10	6.	2.	1.
25	11.	4.	2.
50	19.	7.	4.
75	25.	9.	5.
100	32.	11.	6.
200	54.	18.	10.
300	72.	24.	15.
500	106.	35.	21.
1000	180.	60.	35.

Observations of other openings on the stream, measuring the flood section of the stream, or noting the indications of drift or other evidences of high water, may often give the best evidence of what is to be expected, and enable a judgment to be formed as to the culvert area required.

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## HANDWORK IN GRADES ONE TO SIX

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## INTRODUCTION—RELATION BETWEEN TECHNICAL AND EXPRESSIONAL HANDWORK

Handwork as a school subject is so new that its advocates are still far from agreed either as to its subject matter, its methods, or its purpose. Different groups in turn advocate a form which emphasizes marketable skill, a form which allows free rein to originality and inventive genius, a form which will produce useful articles for the home and school, a type which deals with the immediate interests of the child and allows him "to make what he wants to make", and so on. Reasonable arguments are brought forward in support of each of these conflicting aims and the meeting of all these needs in a single course of study is puzzling. Nowhere is this confusion so marked as in the elementary field.

Many problems lose their formidable aspect when a new viewpoint is taken. Many of the difficulties in organizing a course in handwork disappear as soon as we accept the premise that handwork has two distinct functions, that it is both an end in itself and a means to an end, that it is sometimes a subject and sometimes a method of teaching other subjects. The conditions involved in expressional handwork which seeks to develop originality and inventive genius are radically different from the conditions involved in developing skill and accuracy in any given process. Both types of work are essential in a well rounded course of study but cannot be taught by the same method nor at the same time.

If we accept these conditions frankly, the problem at once divides itself into two general propositions: first, the handwork which is general in its application and free in its methods without emphasis upon technical processes; and second, that which is specific and restricted by commonly accepted professional practice. As a school subject we are most familiar with the latter type of work, which we commonly class as a special subject, the work being done at a specified time with special equipment and under the direction of a specially prepared teacher, the projects undertaken frequently having no direct relation to the other subjects studied by the pupils. The former type of work may be, and is largely, a part of regular classroom work under the guidance of the regular teacher and must in time come to be as much a part of her regular training as training in the methods of teaching arithmetic or music. Until that time the untrained teacher will probably be able to guide expressional handwork with greater success and less disaster to the pupil than she frequently experiences in her attempt to teach any technical subject.



In an attempt to meet the conditions outlined above, the suggestions for handwork in the grades offered in this bulletin are grouped under two heads, which for want of better names have been distinguished as *technical* and *expressional*. Under the head of the technical work are grouped projects which involve technical skill on the part of the worker, projects which depend for their success upon the quality of workmanship displayed. It goes without saying that such work to be fully successful requires the direction of a skilled teacher well versed in the technique of the processes he teaches. It is also self-evident that work of this type demands a definite time at which the pupil's entire attention shall be given to the mastery of processes involved. In this group are included benchwork in wood, coping-saw work and other exercises in work which may be carried on in the ordinary classroom, work in metal and leather, basket making, book-binding, and cardboard construction. Work of this type presupposes a definite project thru which the pupil shall be *taught how* to do the work in the best and most economical manner as determined by professional or trade practices, and in which he shall be held to as high a standard of excellence in workmanship as the conditions warrant.

Under the head of expressional work are grouped all exercises which are chiefly expressional in their purpose, forms of work which seek to give the pupils a general acquaintance with different materials and their properties rather than skill in the use of some one material, and forms of work which are closely correlated with some book subject and are valuable chiefly as illustrations. Work of this sort includes such projects as playhouses and stores, models and miniatures illustrating topics in history and geography, sandtable representations picturing scenes in literature, history, or geography, and picture making with free-hand cuttings, crayons, and watercolor.

The outlines which follow do not attempt to give definite and detailed directions for specific projects. The purpose is rather to suggest *what* to teach and *why* it should be taught. Reference is made, wherever possible, to a reliable book which gives satisfactory help in the methods best suited to any particular form of handwork.

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## EXPRESSIONAL HANDWORK

The great business of little children is to become acquainted with the world about them. This includes a general knowledge of materials, how they behave, what purpose they will serve, and how they may be controlled. It seems reasonable, therefore, that the handwork for the lower grades shall deal with a variety of materials with which children may experiment quite freely in order that they may gain first-hand experience of what can be done with them.

Little children, when they first enter school, are unconscious of any need for skill and are therefore not ready for technical handwork.

The desire for skill must be aroused thru desire for a thing which requires skill. Whether a plant label is five inches long or misses that measurement by an eighth of an inch does not materially interfere with its usefulness as a plant label, and the pupil is apt to attribute what seems to be an arbitrary demand for accuracy to the teacher's general fussiness. A spool top which will not spin because the stalk is too long sets its own standard of accuracy and not only creates a desire for better work but suggests the means. It seems reasonable that the early projects in handwork should be drawn from the field of the child's immediate interests and deal with things which he wants and is glad to put forth effort to secure, and which at the same time will be unsatisfactory to him unless they are fairly well made.

In a large proportion of schools a pupil's progress is measured only by what he can say with his tongue or pen, disregarding entirely what he might tell with his hands. For example, in any given class there is apt to be one at least who talks glibly and makes a good showing in oral recitations but fails utterly in an attempt to write out a connected description of the same topic. There is apt to be another whose diffidence makes him fail in an attempt to talk but who can express his thoughts clearly in writing, and a third who finds himself at a loss in using words either oral or written but who can "show you how it is" if given an opportunity to handle tangible materials. When, for example, this last pupil has made a clever representation on the sandtable, the teacher is apt to say to the admiring visitor, "Oh, yes, John can do such things, but he can't do anything else," in a tone which implies that John's ability to express his ideas through his fingers is of much less value than Henry's ability to talk or write. Without discussing the merits of the case from any other standpoint, it is a good thing for John sometimes to feel a thrill of pride from having succeeded better than his classmates instead of always being outstripped by them. It seems reasonable that the work of the school should include such a variety of mediums of expression that every child could use at least one of them with fair success, thus encouraging him to try again. In no other way can we expect him to find himself.

The most prominent characteristic of little children is their restless activity and constant desire to be doing something. The successful program of education must recognize this activity in two ways. First, the physical necessity for activity for growing children demands an organization of methods which will provide for such activity as a regular part of school work and not merely as rest. Second, the importance and value of learning to do by doing suggests greater emphasis than is usually paid to motor expression as an effective method of teaching, even apart from its appeal to the interest.

Illustrative handwork has a place not only as a means of expression but also as a means of impression. Often a rough model, a quickly constructed sandtable project, or a striking poster will convey more at a glance and make a more lasting impression than can be gained from pages of reading or lengthy verbal descriptions. For example, a class of children which had been struggling vaguely with the mystery of the motions of the earth was set to making a very sim-

ple piece of illustrative apparatus. An apple revolving on a bent wire was set at the end of a piece of a yardstick. The yardstick in turn revolved around a candle while the wire "axis" pointed steadily to the north. The apparatus was crude and imperfect, but it brought out two strong points in a graphic way. The delighted and enlightened expression of the children as they said "Oh, now I see how it is," was ample justification for the method used. It seems reasonable, therefore, that graphic expression shall be accepted as a regular form of study and recitation and recognized as having a value comparable with talking and writing.

If the foregoing propositions are accepted, it follows that, to meet the needs of the children and successfully carry on the business of education, the educative program must (1) include work which will give a general acquaintance with a variety of common materials; (2) include work which sets its own standards of excellence; (3) provide an adequate variety of mediums of expression; (4) recognize the value of motor expression; (5) recognize the value of graphic methods of impression. These things have to do with the regular daily classroom work and cannot be satisfactorily accomplished by an occasional period of special work no matter how excellent the work of that period may be, considered on its own merits alone.

Last but not least, expressional handwork may to a large extent be carried on with very inexpensive materials and thus eliminate an obstacle which frequently prevents the introduction of technical work. Moreover, a close correlation with the regular subjects makes the handwork a part of the subject illustrated, to be worked upon in the time allotted to that subject instead of requiring a separate period, and this eliminates another serious obstacle in the way of the general introduction of handwork.

Some schools do no handwork at all, arguing that it is better to do nothing than to do the wrong thing, but the constructive instincts are too important to be overlooked as factors in the educative process. While it is a serious mistake to pretend to be teaching technical processes as such unless they are rightly taught, much value comes from experimenting with materials in a way which gives the worker first-hand acquaintance with their characteristics and makes him feel his lack of control over them. The harm comes, not through his crude efforts which he recognizes as crude, but through the formation of bad habits which he has been taught or allowed to believe are correct professional methods of procedure. Free experimentation with materials under proper encouragement generally makes the worker conscious of his lack of control of both tools and materials. He is then in a teachable frame of mind, eager for the help of a master and willing to perform the drill work necessary to acquire skill in any process.

*Expressional handwork* may serve as a method of teaching the traditional subjects in two ways. First, thru illustrations of various sorts, an idea which has its source in the book subject, is made clearer or more deeply impressed thru the making of an illustration. In illustrative work the current of thought flows from the book subject to the handwork. Second, a project, such as that of building a store

or playhouse, may be undertaken for its own sake. The process of building will necessarily involve many phases of work commonly studied as separate subjects. The parts will have to be measured and number problems of a practical sort will demand solution. Color combinations and proportions will call into use all the worker's good taste, which is but another name for applied art. Interesting points will arouse curiosity and a desire for further knowledge which is to be found in books. The books will then be read with a real motive. Discussions will arise over many topics, causing each contestant to defend his position in the most forceful English he can employ, and he then has "something to say," instead of "having to say something".

This second type of work is still expressional in character and leaves technical processes in the background. The current of thought flows from the handwork toward the subject matter, which develops incidentally but none the less vitally. But these nontechnical problems form a very proper preparation for, and introduction to, technical work in various materials later on, in that they give to the pupils a first-hand experience with many materials and a few simple tools. This experience generally awakens a desire for further knowledge and skill, and supplies the motive for technical work. This second type of expressional handwork is outlined below under the head of *representative* problems as distinguished from *illustrative* problems which take their rise in some other subject.

It is important that we keep in mind the points of variance between technical and expressional handwork. When skill of hand is the purpose in view, attention must be centered in the actual tool processes, and the thing to be made is of secondary importance. That is, if skill in planing is the thing desired, it does not matter greatly whether it comes thru making breadboards or hatracks, but it is of prime importance that the worker handle his plane in the most effective way. It is not only important to obtain a good result, but it should be gained by the best means. When, however, the project in hand is an illustration for a geography lesson, its chief purpose is to teach the geography lesson in the most efficient and effective manner. It is desired only to make certain facts and conditions stand out boldly in the pupil's mind and to deepen the impression by adding muscular sensations to those received thru eye and ear. Upon such conditions the technical process of handwork is of secondary importance and the method of holding saw or plane may be passed over while attention is centered in the general effect to be secured. \*

### ILLUSTRATIVE PROBLEMS

Illustrative handwork as an aid in teaching other subjects has a place in every school and in every grade. It is of greatest value in the lower grades where the children have not yet learned to separate ideas from tangible and personal connections and where in the pupils' active imagination the real and the unreal are inextricably tied up together. As progress is made thru the grades and power to think abstractively is developed, the concrete illustration becomes less and less necessary.

## I. PICTURE MAKING

*Picture making* has a double appeal to the interest of children, first thru the clearer understanding of a subject which comes to them thru the picture, and second, thru the pleasure they find in the process of making. The effect of such work is more lasting because to the impression made by the picture is added the impression made by doing the work.

**Paper cutting.** Paper and scissors are always a fascinating combination to children. Freehand cutting helps the child to clarify his ideas thru the attempt to express them and helps the teacher to discover to some extent what sort of mental pictures he is forming. The cutting should always begin with familiar objects. He cannot express what is not already in his mind. This should be done without objects to guide at first, otherwise his work is not free expression but mere copying. Frequent cutting lessons from an abundant supply of cheap paper, permitting repeated attempts, are essential at first. Too great haste to get showy results by using patterns, copying pictures in magazines, and other short cuts may accomplish its purpose, but it misses the chief aim of the work; i. e., a clear expression of a clear idea. Out of the "big blooming buzzing confusion" of a little child's mind, clearness and order will come slowly but surely only thru his efforts to express himself. When the children can find no more defects in their work, they are ready to compare it with the real object or with a good picture and then try again.

Order of progress in paper cutting:

1. Free cutting of familiar objects, such as trees, pets, people, household utensils and furniture, etc.
2. Telling familiar stories with the scissors, as Mother Goose rhymes and fairy tales.
3. Reproducing new stories; i. e., receiving and giving back new ideas.
4. Co-operative work in which several pupils each cut out different parts of a single picture. This type places greater emphasis on relative proportions since all must work to a common scale. It also emphasizes the social element since there must be a common agreement as to arrangement.
5. Cutting of objects, flowers, etc., as a form of art study. This helps the children to see masses rather than details.

Material for paper cutting:

1. Any plain, white paper serves the purpose.
2. Newspapers may be used for practice work. The fine print gives a soft gray tone which looks well mounted on a darker paper.
3. Black paper makes attractive silhouettes.
4. Brown kraft wrapping paper, which can be bought by the roll at a low price, makes an excellent background material.
5. Bogus paper gives a soft gray tone for background and is also cheap.
6. Colored cutting papers, to be had at any kindergarten supply house, are excellent for landscape work and other forms where color is desired.

7. Waste paper for pasting. One of the most important items in the successful mounting of paper cuttings is an ample supply of waste paper (clean newspaper). The cutting should be laid upon a piece of waste paper that the paste may be easily spread over the edges. After the cutting is in place, another dry waste sheet should be laid in over it. It may then be "rubbed" until the cutting is securely pasted, without soiling the mount.

Paper tearing serves many of the same purposes sought in paper cutting. Of necessity, small details must be omitted in this process



*"Jack and the Beanstalk." Brushwork illustrations by second grade class, Columbia, Mo.*

and the attention is held to main lines and big proportions. If the paper from which the figure is torn; i. e., the hole, is saved, the child is encouraged to produce an acceptable result on the first attempt, as contrasted with a tendency to "trim off" which often accompanies work with scissors, a tendency which leads to vagueness in expression rather than clearness. Paper tearing also tends to develop dexterity with the fingers and forestalls a weak dependence upon certain tools.

**Crayon and brushwork.** These two mediums serve many of the purposes already outlined for paper cutting and add variety to the form of expression. Work of this sort may be closely correlated with reading, literature, history, and geography, and offers a desirable form of recitation even more valuable in some instances than accepted oral and written recitations. Its application changes with the changing subject matter and its standards of technique rise with the development of the children. It offers an excellent opportunity for teaching space relation and balance, proper margins, and the need of good lettering. Such work has a place all thru the grades.

**Posters.** The term poster is applied to all forms of picture making which attempt to bring out some particular point in a graphic way. Paper cutting may be mounted in poster form allowing the whole school to see at a glance how one pupil's work compares with another's. Crayon and water color may be used in the same way. History and geography lessons may be expressed in poster form thru the use of mounted pictures, drawings, or combinations of both. The making of a poster should be as serious a part of regular school work

as the working out of arithmetic problems. It should not be used as recreation or show work for visitor's day. The pupil should be thrown on his own responsibility to the fullest extent in the choice of material for the poster and for its arrangement. The teacher who, in her zeal for showy work, directs too closely in these matters robs the children of the development that comes thru the necessity of deciding for themselves.

Finished posters should be criticised in a kindly spirit by both pupils and teachers, and suggestions offered for the improvement of the next set. The method of criticism should always look for and emphasize the good points first. This alone will cause the quality of the work to rise to a higher level. After the children learn how to find the good things and give a reason for liking them instead of laughing at the mistakes of their classmates, it is helpful to use a constructive form of criticism, as for example, "Little Red Riding Hood is too large. She could not go into the house"; "Mary's lamb is as big as the teacher"; and similar comments. In general this method of criticism holds good for all forms of handwork. The teacher's opinion arbitrarily given does little to help the children to higher independent judgments.

Points to be especially emphasized:

1. Choice of material—Does the Poster tell its story clearly? Avoid attempting to tell too much.

2. Arrangement—If several small pictures are used, do they make a well-balanced page? This is an excellent field for applied design. Avoid crowding.

3. Drawing and color—Poster-making offers a field for developing ability in freehand drawing and in color harmony.

4. Lettering—A very important factor. Poster-making creates a feeling of need for ability to letter well and stimulates progress therein. Encourage plain lettering, well executed.

5. Margins—A well-proportioned margin adds much to general appearance.

Continued thru the grades as a method of illustration for geography, history, and literature, poster-making offers a field in which the pupil may apply the technical points studied in his drawing lesson. The drawing hour may often be devoted to teaching how to get better results in some particulars in which the work is weak.

## II. SANDTABLE WORK

Sargent very aptly describes sandtable representations as pictures in three dimensions. As the ordinary picture adds vividness to the printed description, the placing of actual figures adds reality to the scenes represented. Work of this sort is at its best when the pupils are allowed to represent freely their conception of the topic. The attempt to express helps to give shape to otherwise vague ideas. The quality of the work done helps the teacher to measure the pupil's power to grasp new ideas. Sandtables have been regarded as suitable only for primary rooms, to be used there for play rather than serious effect. All thru the grades, however, the sandtable picture fur-

nishes a valuable medium of expression in geography, history, and literature, not only adding interest to the study but making impressions more lasting thru the graphic nature of the work.

Organization of classes for sandtable projects. In some quarters the graded-school idea has been so greatly overemphasized that no topic seems properly presented unless each member of the class is doing the same thing at the same time. Many teachers fear to attempt sandtable work lest the novelty prove distracting and disturb the discipline of the room. If a few trusty pupils are allowed to build interesting pictures on the table, others will wish to be worthy of the same privilege and the work may be used as a spur to better behavior. The first project or two will, no doubt, be watched with intense interest by those at their seats, but this fact offers no argument against the work, and the wise teacher will turn the interest to account as a lever of control. The novelty will soon wear off and, after that, work at the sandtable will be no more disturbing than work at the blackboard. The most helpful sandtable projects are those made quickly to illustrate some topic under immediate discussion. It is also helpful to treat the work as a form of recitation and allow a group of pupils to model a contour map, for example, while the rest of the class work upon some other phase of the subject, such as posters showing costumes, homes, or products of the same country. Elaborate representations which are planned and closely supervised by the teacher are less valuable from the educative standpoint since they relieve the pupil of the necessity of thinking for himself.

Choice of topics. Topics dealing with persons and places lend themselves most satisfactorily to sandtable work. Abstract and complicated problems are to be avoided. Very familiar topics which need no explanation or illustration are often good for the first attempts at illustrative work as one important element in expressional work is the necessity for an idea to be expressed. Beginning with some familiar topic the pupil is better able to judge of his own success. Also, it is important always to begin with easy things in order to establish a habit of success and confidence rather than one of failure and discouragement.

### III. BOOKLETS

Illustrated booklets form a helpful accompaniment to nearly all book subjects. The interest aroused thru collecting and sketching illustrations for the booklet has great motive power. The opportunities for incidental emphasis on art values are equal to those noted above under the head of poster-making. The successful results derived from these opportunities depend largely upon the methods used. In many schools, booklets are made only for exhibit days or other special occasions. The importance of these occasions demands an outward show of success which is often attained thru a strained supervision, wearisome alike to pupil and teacher. The making of a booklet reaches its highest educative value when it forms a part of regular classroom methods and when the pupil feels the maximum responsibility for its success. Used as a beautiful and interesting way of preparing written

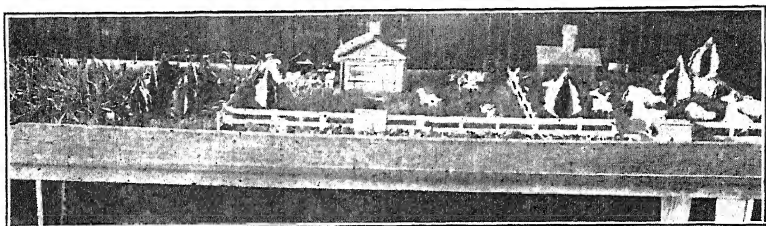


work, it also stimulates interest in the subject matter which it contains.

Booklets may be either individual or community projects. The illustrations may be either pictures cut from newspapers and discarded magazines or freehand sketches. The use of sketches has an advantage in two respects. It encourages the children to draw, and avoids the possible temptation to cut pictures from pages that should be preserved.

#### IV. MINIATURES AND MODELS

Closely related to picture making by posters and on the sandtable, is the construction of miniatures and models of interesting objects



*Sandtable farm. Work of second grade pupils, Columbia Schools.*

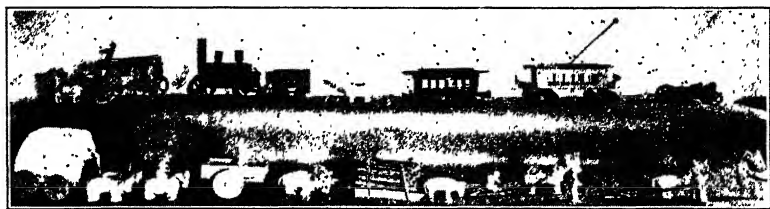
and mechanisms, such as the cotton gin, the water wheel, the bucket conveyor, etc. Reading descriptions of these things and looking at pictures of them is interesting and enlightening. The knowledge so gained may be clear and definite in some cases but is apt often to be vague and soon forgotten. The attempt to make a model of the thing described sends the pupil back to the description to read again until he has a clearer mental picture. The attempt to "make it work" emphasizes many mechanical principles, and makes the idea still clearer, even tho the work may be very roughly and crudely done. Such attempts usually clear up the maker's idea to such an extent that he can point out the deficiencies in his own work and show how it should be made, were he possessed of the proper materials and tools, or of sufficient skill, or of time in which to repeat his effort. It needs no argument to prove that a crude attempt coupled with such a state of mind has some advantages not to be found in a *model* which is a mere copy of another person's work made under dictation and without independent thought, even tho such model were finished with great precision.

*Organization.* Constructions of this sort include representations of various utensils and machines referred to in history and geography texts and make a helpful correlation with those subjects. A popular list would include vehicles of various times and countries, primitive farm implements, the cotton gin, the loom, and similar projects. The attempt to work out projects of this sort calls out all the ingenuity a boy possesses and sends him back to read and reread all the descriptive matter he can find before his rendition meets his own approval. In

fact, it seldom wholly meets his own approval and he is generally able to point out its defects intelligently. The interaction between his study and his attempt to express ideas gained clarifies his ideas and fixes them in his memory.

The accompanying illustration shows a series of representations of the Evolution of Transportation by Land. The method organization for such a project would include:

1. A brief study of the whole topic by the entire class.
2. Division of the class into small groups.
3. Division of the topic with a corresponding number of groups, selecting the most important phrases if the class is too



*Evolution of transportation by land*

small to undertake a detailed study. In some instances each pupil may have a definite part of his own, but there are advantages in having two or three working together.

4. Detailed study of subtopic by the group to which it is assigned and the construction of a model which will make clear the information which they have gained concerning the topic allotted to them.

5. Assembling of the various projects in their chronological order and an explanation of each for the benefit of the whole class by members of the group in charge of it.

A project of this sort encourages independent study and helps the pupil not only to rely upon himself but to make sure of his information. Each group is anxious to make a good showing before the class. "The feeling of the audience" is strong in such instances. Such projects also apply and test the pupil's knowledge in other fields, as measurement, art values, use of clear, well-chosen English in explanation, etc.

Suggested topics for similar treatment:

- Evolution of transportation by water.
- Evolution of methods of measuring time.
- Evolution of methods of lighting.
- Evolution of methods of writing.
- Evolution of methods of cooking.
- Evolution of harvesting machines.
- Evolution of various woodworking tools.
- Evolution of various modern inventions.

The common industries of the present day offer another rich field of study in which the making of miniatures and models adds vitality

to the work. Such informal study gives a general acquaintance with various kinds of work which are being done in the world. Such knowledge is the first step toward vocational guidance. Topics such as the following will awaken keen interest in the middle grades and offer profitable problems in construction.

Any local industry.

Bridges—various types and uses.

A city telephone system.

Brick making—processes and products.

A planing mill.

A flour mill.

Canal locks.

Problems of this sort are well suited to grades five, six, and seven. The lack of emphasis on technique allows free play for initiative, and the children are apt to produce more ingenious models than any one teacher could suggest. Incidentally, much information is gained from handling tools and material which is helpful later on when technical work is begun.

For further suggestions, see *Illustrative Handwork*, Dobbs.

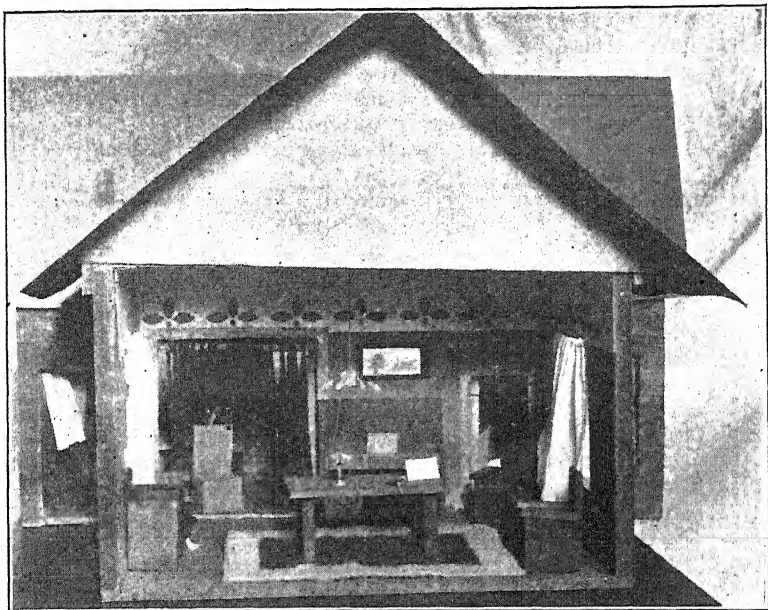
### REPRESENTATIVE PROBLEMS

Under this head are included those phases of expressional handwork in which a project is undertaken for its own sake and in which the correlated subject matter is an incidental outgrowth of the handwork. It presents a psychological rather than a logical organization of subject matter. Because it deals with topics on the level of a child's appreciation and presents them in a natural way, it is well-suited to the needs of the lower grades and may serve as the core about which other phases of the course of study are grouped and in which they find their source. For example, if the pupils have decided to make a play store in an empty box, they are at once confronted with the necessity of preparing shelving, and the space to be filled must be measured or at least estimated with some degree of accuracy before shelves of proper proportions can be made. In problems of this sort difficulties are met and mastered as they arise. False situations are not arranged in order to teach that two and two are four. The project itself is real and worth while from the worker's point of view, and to the child who meets the conditions as they arise the fact that two and two are four becomes self-evident. The underlying principle is the same as that which has been behind man's progress from the earliest ages.

A complete application of this principle would work radical changes in courses of study for the lower grades. Tho these changes may be desirable, anything like a sudden revolution might be disastrous, and it is suggested that representative problems be used as occasional projects at times when the correlation with required subject matter is most easy and natural until such time as work of this more radical sort has proved its worth and teachers are prepared to use it efficiently.

## THE PLAYHOUSE

The building of a playhouse offers a field for the natural activity of children which may be both interesting and profitable. Being the imitation and reproduction of home conditions, it appeals to the interest of the children of all ages from their various viewpoints. To the little people it is a playhouse only, or it is the home of story-



*Playhouse made of four boxes arranged on a table*

book friends. Later, as interest in "true stories" supplants that in the fairy tale, they enjoy representing homes of other people and other places. A little later still, interest centers in working out plans for real houses such as they hope to live in by and by. The playhouse idea, therefore, is not confined to any one grade or period but serves a worthy purpose all the way through the grades, but with a changing purpose and more refined treatment.

Materials for playhouse:

*Empty boxes* serve well as a foundation, one box being used for each room. The boxes may be arranged to suit various styles of architecture, and doors and windows may be cut where needed. Boxes of thin, soft wood are most satisfactory. Boxes of double-faced, corrugated paper, so commonly used in shipping, are more easily obtained than wooden boxes and serve almost as well. The box house has several advantages over the ready-made house which can only be furnished by the children. The boxes, being separate, can be moved about to convenient places while the work is in progress. They permit great vari-

ety of arrangement and, best of all, make it possible for each class to feel the thrill of satisfaction that goes with saying, "We did it *all* ourselves."

*Wall paper.* Odds and ends of plain paper may be had for little or nothing from paper dealers. Cover papers in good colors may be had at low cost. Color schemes and border designs make good subject matter for art lessons.

*Furniture* made from blocks and thin strips of wood is most substantial and easiest to construct. The strongest argument in its favor is that as soon as even little first grade tots see furniture of this type they respond with, "Oh, I could make a chair like that," etc. In the case of paper furniture, much more commonly used, the process of making is complicated and each step must be dictated and supervised by the teacher, allowing no opportunity for free activity until a single exercise has been repeated enough times for a child to memorize the steps. Some children never reach this point. Paper furniture at best is frail and soon loses its shape.

*Draperies and bedding* offer a field for the introduction of instruction in sewing.

*Clay* may be used for modeling bathroom furniture and some kitchen utensils.

Throughout the housebuilding process it is possible, even in the first grade, to plant many seeds of suggestion regarding proper sanitary conditions, good taste in furnishings, convenience in arrangement, and similar points, which with cultivation may develop into high ideals in due time.

See *Primary Handwork*, Dobbs. Macmillan Company, 75 cents.

## THE PLAY STORE

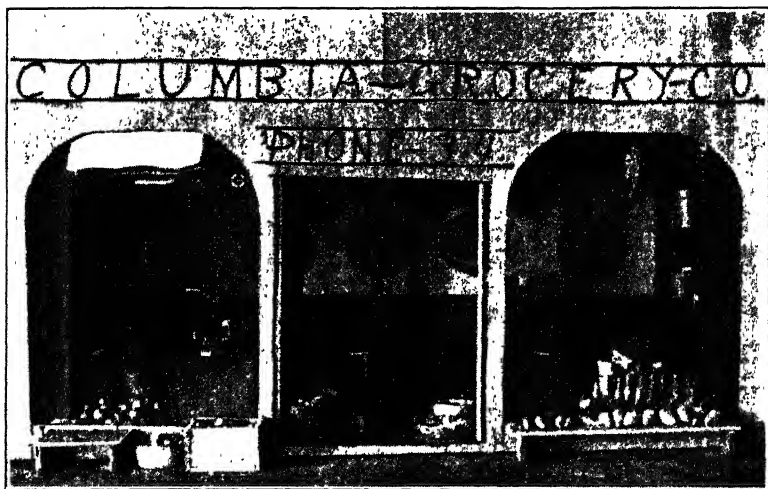
As the making of a playhouse appeals to all children because it is an imitation of home and mother's world, so the making of a play store appeals as an imitation of town and the big world of the fathers. It offers a gateway into the whole field of industry from which may be chosen topics which are most vital to the children for whom the work is planned. These topics give rise to vital questions; as, where did it come from, how was it prepared for use, and how is it measured, and what is it worth. A whole curriculum may be easily built up about such a topic, or the work may be done as a parallel to home geography and similar popular phases of subject matter.

The making of play stores may be made the work of an entire class, centering attention upon the work of the grocer for a time, then upon the stock of a dry goods store, and so on. Or, the class may be divided into groups, each group being responsible for one store and expected to tell the rest of the class many interesting things about that particular business. The former plan is best suited to grades one and two. The latter plan works well in third and fourth grades and carries with it the feeling of the audience, so necessary to successful efforts in oral description.

Work of this sort makes a helpful accompaniment to the school excursion, in that the attempt to express helps to impress what has

been seen, or if the visit follows the attempt to construct, the children are more keenly interested in details they found trouble in representing, and observe much they had never noted before.

*Empty boxes* serve as a foundation and may be filled with make-believe merchandise gathered from every available source and manufactured from all sorts of materials. Where space permits, a collection of real samples may be used for playing store in very realistic fashion.



*Play store made by third grade pupils, Columbia, Mo.*

Work of this sort supplies abundant materials for live lessons in number, geography, and English.

For further suggestions on representative problems, see *Primary Handwork*.

## TECHNICAL HANDWORK

Technical handwork looks to the development of skill and presupposes a feeling of need and a desire for skill on the part of the worker. The development of skill involves a mastery of tool processes and a study of the characteristics of the materials to be used. The development of skill requires also the direction of a skilled master who is not only a master of the technique of tool processes, but is at the same time a *teacher* who understands child nature, and who is as much interested in, and as capable of, developing strong boys as he is expert in making strong tables.

In the lower grades occasional problems of an individual nature, such as the making of gifts, and various occasions incidental to community problems make opportunity for all the emphasis on procedure needed. In the middle grades definite lessons under the direction of the regular teacher may be carried on in the regular classroom. In the upper grades special equipment and a trained teacher are needed to secure the best results in sewing and cooking for girls, benchwork and printing for boys.

### ORGANIZATION OF TECHNICAL HANDWORK IN THE GRADES

1. Projects should set their own standards of excellence.

Since the development of skill is one of the chief purposes to be served thru technical handwork, it is important that the projects selected should be of a type to demand a reasonable degree of skill even from a careless worker. For example, kites must fly, tops must spin, mechanical toys must "work," or the maker's efforts are a failure. The teacher's mark is not needed to set a value upon such a project.

2. Projects should appeal to the pupil as worth while.

The pure enjoyment in motor activity is so great that many children will work long and earnestly upon projects which have little intrinsic interest, but in general it is true that the effort put forth toward acquiring skill is proportionate to the interest the worker has in the thing worked upon.

3. Projects should stimulate interest in the direction of further study.

A kite making contest is likely to set the makers studying the mechanical principles involved with great earnestness.

4. Projects should encourage independent effort and application at home.

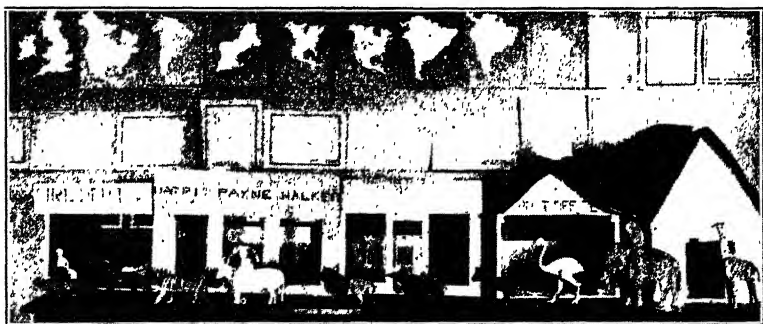
To this end, a modest array of tools is best for beginners, lest they develop the idea that nothing can be done without a complete outfit.

While technical work as such has only a small place in the lower grades, that small place should not be overlooked. Tho the opportunities for emphasis on "the way to do it" are often incidental to larger plans, the impression is most helpful when the need is felt. Special days suggest appropriate types of individual projects, as gift making, when there is special need and desire for the best workmanship.

Certain types of work as bookmaking, sewing, sawing, and nailing have a universal application and offer projects suited to all grades, with a steadily rising standard of workmanship.

In the outlines which follow, more types of work are suggested than any one school will find it convenient or advisable to use. They are offered in the hope that among them something may be found suitable to the needs and conditions of every school.

No attempt is made here to give detailed directions for any technical process. The place and value of different types of work is



*Play stores made with boxes. Circus parade of three-ply animals.  
Dough maps.*

indicated and reference made to one or two books which give reliable directions for work.

### TOY MAKING

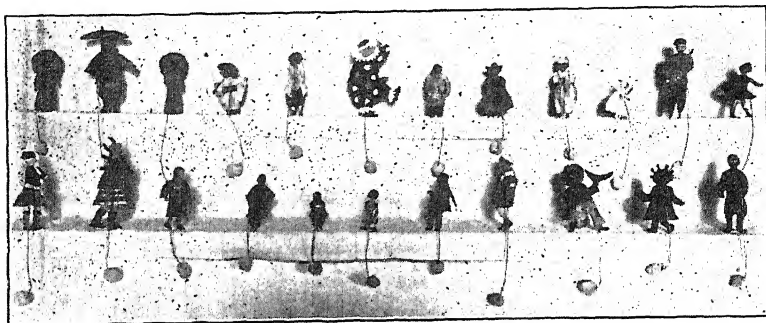
*Toy making* appeals to the immediate interests of children especially in grades below the sixth and offers an unlimited variety of projects of all degrees of difficulty in construction. It is also possible by this means to introduce in a simple way many fundamental principles in mechanics. Many toys can be made from odds and ends of materials to be found about home.

In organizing a course in toy making or in planning for projects in this field, it is important to note that one of its greatest values lies in mental development incidental to appreciating and controlling the mechanical principle involved in the making of the toy. This mental development is often greatly interfered with when the pupil is given a working drawing or ready-made pattern which relieves him to a large extent of the necessity of thinking for himself. It is generally better to exhibit a finished toy and allow the pupils to examine it and discover the secret of its operation. They may then make a sketch of it and plan their own projects or take measurements from it and make a working plan for duplication of it. Whatever the plan used, it should require the maximum thought from the pupils and not deprive them of the joy of discovering mechanical secrets. Probably the poorest method to be used is that which dictates the making of



certain parts in blind fashion, allowing the surprise of the final result to reward the pupils for their obedience. Unfortunately, this method still has followers especially in the lower grades.

*Coping Saw Work.* This work appeals especially to boys of the fourth and fifth grades. It serves especially well for sawing out figures of animals and other irregular shapes. Figures cut in a single piece may be braced and made to stand—or balanced by means of weights. Three ply animals may be made to stand alone. A very realistic circus may be made this way.



*People of all nations. Coping saw figures balanced by ball and wire.*

*Balancing Toys.* Toys of this sort make an excellent preparation for the later study of physics. Weighted spools and a ball and wire balance involve problems of equilibrium. The pendulum and the spring also play important parts in toys which fascinate and are so simple that the most timid is encouraged to try.

Suggested list of projects:

Cardboard figures on weighted spools and boxes.

People of all nations in wood or cardboard.

Figures for a toy theater.

Dancing clowns and bears.

Jumping jacks.

Animals that move head and tail by means of ball and string.

Coping saw figures balanced with ball and wire.

*Stick Work.* Material for this work consists of sticks and thin boards of various widths and thicknesses from which the worker may choose the piece suited to his needs, and saw off the necessary length. This reduces the processes involved to measuring one dimension, sawing off, and nailing on. These processes are simple enough for the first grade children. The list of things to be made is limited only by the ingenuity of the class and includes kites, doll furniture, games, toys, and similar projects.

For detailed methods see: *Homemade Toys for Girls and Boys*, Hall. Lothrop, Lee & Shepard Co., \$1.25. *Coping Saw Work*, Johnson. Manual Arts Press, 20 cts. *Primary Handbook*, Dobbs. Macmillan Co., 75 cts.

## CARDBOARD CONSTRUCTION

Cardboard lends itself to numerous projects both interesting and serviceable in the school and home. These projects may be carried out in the ordinary classroom and are well suited to the grades above the fifth. Each of the problems following is capable of modification to suit the ability of the children in the different grades. Many of them may be simply made in a lower grade and repeated in an upper grade with new features and more refined execution which add to their dignity. These projects call for the best the worker can give in the field of design. The general proportions and color harmonies are important factors whether or not any decoration is used. They also call into play the pupil's knowledge of number and measurement. Work in cardboard gives the worker a kind of skill which is useful in the home in many ways and may lead to means of earning a living, if need be, since it is the first step towards box making and bookbinding. The materials needed are not expensive and the equipment is within the reach of any school.

Projects in cardboard:

Portfolios

Notebook covers.

The process of construction is similar to these two projects, but they permit an infinite variety of variations in size, color, and immediate purpose. If skill to any considerable degree is to be attained, the processes must be repeated with slight modifications until the worker masters each step. The repetitions need not follow each other directly but may be interspersed thruout the period as occasions for the project arise.

Desk sets, including

blotting pad

small blotter

pen tray

paper and envelope case

calendar.

Any of the above may serve as an isolated project if time does not permit working out a whole set. They afford excellent material for teaching design thru its practical applications.

Boxes—As the use for boxes is unlimited, so the field of box making is limited only by the needs and interest of the class. For complete outline, see *Paper and Cardboard Construction*, Buxton and Curran. The Manual Arts Press, Peoria, Ill., \$1.50.

## LEATHER WORK

The process of tooling leather is quite within the powers of pupils in the upper grades. The chief fault to be found with it as a school subject is the expense of the material. In schools where it is the custom for pupils to pay for their own material and in communities where they are able to pay twenty-five to fifty cents for material for a single piece of work, leather work is feasible and beautiful things may be made which are well worth the time they occupy

The process in itself is simple. The success of the work depends chiefly upon the design used which places the process in the field of applied design.

A few small and inexpensive articles suitable for grade work are:

- Penwiper
- Needle book
- Scissors case
- Cardcase
- Handbag
- Blotter corners
- Small mats.

See *Leather Work*, Adelaide Mickel. Manual Arts Press.

### CLAY AND POTTERY

Clay deserves a much larger place in the school program than it commonly receives. It costs little and is easily used. It serves a worthy purpose in free modeling of figures of various sorts in the lower grades in expressional work. In the middle grades simple projects in pottery are satisfactory forms of handwork in schools which have access to a kiln.

Suggested list of projects for pottery:

- Tile
- Fern dish
- Bowl
- Paper weight
- Pin tray
- Match box
- Candlestick.

See *Clay Work*, Lester. Manual Arts Press, \$1.

*Cement* may be used in the middle and upper grades for many useful projects, such as flower boxes, tile, etc. Cement hardens without the use of a kiln. While the results are somewhat similar to pottery work, the process is very different. The making of the moulds calls into use the pupil's knowledge of measurement and gives practice in design. Very little equipment is required beyond a roomy table and vessels in which to mix the cement. This work appeals to boys and serves well both in connection with benchwork and in schools which have no shop equipment.

See *Manual Training Course in Concrete*, Ass'n of American Portland Cement Manufacturers, Philadelphia, Pa. (Free.)

### SEWING

Ability to sew is valuable to all people and may well be considered a necessary part of all elementary school programs. In the lower grades the instruction in sewing may be an incidental part of other projects, such as the draperies and bed linen in a playhouse, or dressing dolls to live in the house. Only soft, coarse materials should be used in the lower grades.

The making of gifts furnishes a motive for the beginnings of embroidery in cross-stitch and other simple forms. In the fifth grade

serious work in garment making may be begun. Early work should include practical problems such as sewing on buttons, and is needed by boys and girls alike. All projects should deal with complete and useful articles rather than samplers. In sewing, as in all handwork, correct methods should be taught by a teacher who knows the art. Incidental efforts which place little or no emphasis on technique interfere less with later development of skill than do bad habits drilled in under the supposition that they are correct methods. For projects see technical outline.

The writer is unable to suggest any book which gives a course in sewing well planned for the grades from the standpoint of psychological organization. The books noted give many valuable suggestions which may be adapted to individual conditions.

*Shelter and Clothing*, Kinne and Cooley. Macmillan. *A Sewing Course*, Woolman. F. A. Fernwald, New York.

## WEAVING

*Weaving with paper* may serve as means of studying numbers. For this purpose, the best results are obtained when the children measure and cut their own mats. For first work, the strips should be one inch wide. The prepared mats sold by supply houses deprive the children of the most valuable part of the work. Many of these are cut into fine strips which make the work hard on the eyes. Soft neutral colors are best, and glossy paper which reflects the light is not desirable. The weaving of paper mats merely as busy work has little to recommend it.

*The weaving of textiles* is an incidental process in the furnishing of a playhouse as a means of making rugs, towels, etc. The house furnishes the motive and suggests the size of the rug. For beginners' work ordinary carpet rags are the best material, being easily obtained and easily handled. All weaving for beginners should be small pieces woven with coarse material allowing the children to finish each piece quickly. In the middle grades, cushion covers may be woven from coarse material, such as rovings. The building of a loom is an appropriate project if the pupils have access to the necessary tools.

An extensive course in weaving is scarcely worth while in any grade since the process always involves much repetition. One or two small projects in each grade which introduce some advanced step will give the best results. These projects should, so far as possible, be related to other parts of school work.

Weaves, which may be taught in a variety of combinations:

- plain, over one, under one.
- plain, varied by color in woof.
  - a—longitudinal stripes.
  - b—vertical stripes.
  - c—spots.

plain varied by color in both warp and woof; i. e., gingham checks and plaids.

twills—over one, under two; and variations.

Projects in weaving:

furnishings for doll house.

cushion covers.

mats.

Avoid all work with fine yarns.

## BASKETRY

As an accepted form of handwork for intermediate grades, raffia basketry probably holds first place in point of the number of schools in which it is used. Its use far exceeds its value from an educative point of view. It is a heritage of the fever for Indian baskets which swept the country a few years ago. The chief points in its favor are that it can be done in the ordinary classroom and the process is easily learned. It therefore provides *something to do* in response to the demand for handwork.

Measured for its educative value basketry, as commonly taught, ranks low. The materials are expensive as compared with cardboard work, bookmaking, and many projects in wood. The process of making the ordinary raffia basket is simple and is mastered by the time the pupil has made a few rounds. After that, from the handwork side, it is a mere repetition and may be accomplished with a minimum expenditure of thought. From that point it becomes a problem in applied design, and the advance and variety to be obtained lie in the form and color combinations. These are both good points to be emphasized, but the process of making a basket is very slow and the time expended upon it might be used to better advantage and with greater success in other lines of handwork which offer at least as great opportunities in the field of applied design and have other advantages as well. The making of a sewed basket serves its best purpose as a sort of "pick up" to be worked upon in occasional spare moments that might otherwise be wasted.

The making of reed baskets offers many more problems which require thought and skill than are to be found in raffia baskets. The reeds, however, are much more expensive and since the war the supply is so greatly reduced that this form of basket making is practically impossible in the average school. Various substitutes are offered by the supply houses, but these also are too expensive for the ordinary school. Even if these materials are supplied for the school, the children do not often find them in their homes and cannot apply the knowledge gained by the schoolwork.

There are native materials to be found in almost any community which may be turned to account most successfully. Common grasses may be used. If these are cured in the shade, they retain a beautiful soft green tone which is very attractive. Corn husks make beautiful baskets when carefully selected. Pine needles are still more attractive and make very substantial baskets. Willows are more difficult to use and offer problems for older pupils. The culture of basket willows is a profitable business. Ash splints also may be successfully woven, but these like willows are more difficult to use and need

a teacher who is master of the art. The grass, husk, and pine needle baskets are sewed with raffia and it is possible to attain considerable skill and gain excellent results independently.

None of these various materials, however, offers a type of work which is worthy the exclusive attention given to it in some schools, tho a short period of time may be devoted to this form of work with advantage, provided it is well taught. Baskets are useful articles and the children usually enjoy the process of making if not too long continued.

See *Practical and Artistic Basketry*, Tinsley. Manual Arts Press, \$1.

## BENCHWORK

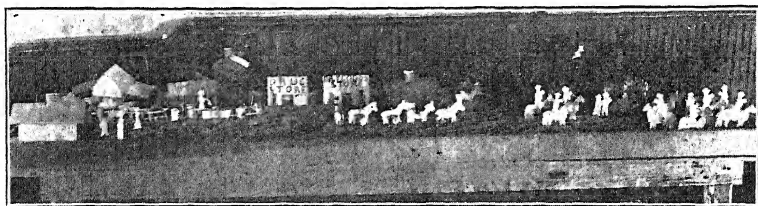
The cost of equipment prevents the introduction of benchwork below the sixth grade in many schools. In a few schools benchwork is begun in the fifth grade or even lower. Some use of wood working tools is desirable all thru the lower grades, but children are not ready for much emphasis on tool practice before the sixth or seventh grade. Up to that time the work given should call for the larger movements of sawing and nailing, the use of the brace and bit, and occasional planing of edges. Large projects which can be worked out from surfaced lumber with more emphasis on measurement and construction than upon tool practice are best for beginning wood work. Sleds, birdhouses, and kites are examples of this sort of work.

Mechanical projects also, such as models of machines, water wheels, electrical apparatus, etc., with which boys love to tinker, may well be brought into the classroom and the tinkering interest turned to account thru a serious investigation of principles involved and the making of good but simple models. Projects of this sort call for careful toolwork and satisfy an interest which is usually strong in boys of twelve and thirteen. Projects which are immediately useful in either home or school help to set a standard of workmanship better understood than the teacher's marks. Any series of exercises in tool practice should be arranged with groups of possible applications from which the worker may choose one or more according to his ability and interest.

*Working Drawings.* The importance of the working-drawing should be made prominent in all benchwork. The workers should begin early to make their own plans. In many schools, during the first year the pupils work from blue prints or blackboard drawings, emphasis being placed only upon power to read the blue print. The second year they copy and enlarge or modify plans which are offered as models or as suggestions. Under such a scheme the workers, anxious to be making things, often regard the time spent upon the drawing as so much loss. This state of mind is less likely to occur, if from the very beginning a working drawing is made for each project before it is undertaken, each worker following his own plans. By this method the relationship between work and plans for work is more deeply impressed and progress in mechanical drawing is slow but sure. This method being individual, allows for individual vari-

ation from the blank model used in many shops. The first exercises in woodwork being simple, they require correspondingly simple plans. New steps in drawing are added to much practice in principles already taught, and the worker learns to think out plans for individual projects in terms of the working drawing as well as in terms of wood. If he wishes to make some special piece, he is able to show intelligently what he wishes to do.

*Equipment.* The equipment of a shop for the use of pupils below the seventh grade need include only the most common tools, such as saws, jackplanes, brace and bit, hammers, try-squares and rule, etc. Work which requires the marking guage and other highly technical tools may well be left to grades above the sixth when really serious technical work is begun.



*"Alibaba and the Forty Thieves." Sandtable illustration by fourth grade class, Columbia, Mo.*

For the pupils, *Essentials of Woodworking*, Griffith, 75 cts. For the teacher, *Correlated Courses in Woodwork*, Griffith. Manual Arts Press, \$1.50.

### PRINTING AND BOOKBINDING

These two forms of work are of exceptional value both from their effects upon other school work and for their values in later vocational work. Good work in printing can be done with small outfits. If funds are plentiful, results will justify a more extensive equipment. Judging from the experience of schools having printshops, no other stimulus reacts so quickly and so satisfactorily in improving the quality of work in English composition. Design also plays an important part in the arrangement of a printed page, and correlation between art and printing courses is mutually helpful.

A list of projects in printing might include circulars, bulletins, invitations, reports, etc., issued by the school, English themes and other composition work of the pupils, a school magazine or newspaper, and any job printing for school use. The newspaper is an especially popular project and a great stimulus toward better written English.

Good work in bookbinding may be done with comparatively little equipment. Sewing frames may be made in the woodshop with very few tools. A letterpress will serve all the needs of a medium-sized class. The materials are inexpensive and easily obtained. Magazines and pamphlets may be bound for the school library. Class work in English and other subjects takes on added value and calls forth

increased effort for good work when bound in permanent and attractive form. Work of this sort makes an excellent foundation for later technical training in bookbinding for vocational ends. Bookbinding, done with due attention to the methods of commercial bindery, is the natural climax of the elementary work in booklet making which finds a large place all through the lower grades, and forms also a desirable parallel to a printing course.

See *Bookbinding for Beginners*, Bean. School Arts Pub. Co.

### METALWORK

Metalwork requires too high a degree of workmanship in obtaining good results to be given a large place below the seventh grade. Pierced work in thin brass and copper is a relatively simple process, but its results are, as a rule, cheap and tawdry and have not sufficient value to recommend them as school projects. Etching on metal may be done with small equipment but the use of acids is too dangerous a process for young boys and girls unless the work is done under very favorable conditions. Raised pieces require an elaborate equipment and the muscular strength of high school pupils.

These eliminations leave only trimmings for woodwork, such as box corners and hinges, which may be cut from very thin metal and tacked in place, as suitable projects for elementary classes.

This subject will be fully treated in a later bulletin.

### GRADES SEVEN AND EIGHT

In many schools not yet equipped for either benchwork or cookery, advanced work in bookbinding and cardboard construction, leather work, simple forms of metalwork, work in cement and clay, basket making, as well as various projects in sewing, may be successfully carried on. The books already referred to give suggestions for advanced work suited to these grades.



## EQUIPMENT

Many schools hesitate to attempt any handwork before an extensive equipment can be installed. Much good work, especially of the expressional type, can be carried on with very little equipment. Other forms of work require special tools and room in which to work. Two lists are given below. The first includes only the tools which ought to be regarded as necessary furnishings for every school. The second list provides a liberal equipment for the first six grades in one building. This list could be modified and curtailed to suit the individual needs of any school.

### MINIMUM EQUIPMENT

**Sandtable**—A sand table should be considered an essential part of the furnishing of every elementary school room. Its cost varies. Any table with tight joints in the top may be fitted with frame about four inches wide to hold sand. It should be low enough to suit the size of the children who use it.

**Work table**—Whenever possible, each room should have a large work table.

**Scissors**—One pair for each child in the room. For best work each room should have a full set but, where necessary, they may be used by two or three rooms in partnership. Cost—from 5 cents per pair up.

**Paste brushes**—Enough to supply the group to be accommodated at the work table. Small sticks may be whittled to a thin paddle shape for this purpose.

**Punch**—A conductor's punch will serve. Each room should possess one if possible. The "Solidhed Eyelet Punch" which sets eyelets may be had for \$1.

**Hammers**—Every school, if possible every room, should own at least one hammer for pupil's use. Several cheap hammers, such as may be had from 10 cents up, will serve a class of house builders, where economy is important.

**Saws**—At least one *cross cut saw* is needed where any woodwork is to be done. At least one *compass saw* is needed if windows and doors are to be sawed out as described in the house problem.

**Mitre box**—A mitre box, fastened firmly to a box or table, is needed if small people are to use the saw. This will usually be donated by a carpenter.

**Brace and auger bit**—One or more will be needed if doors and windows are to be sawed out in making box-playhouses.

**Clay jar**—Each room should have an earthen jar or enameled can fitted with a tight cover in which clay can be kept moist and ready for use whenever needed.

**Weaving frames**—Cardboard frames may be used for small pieces but are less satisfactory than wooden frames. Boxes may be made to serve by driving inch brads one-fourth inch apart across the ends of the box. Frames may be made from three-fourths inch wood by older boys for use of the younger children. For ready made frames, see second list.

Weaving needles, see second list.

Among the essentials should be included a broad shelf upon which the teacher may store her supply of paper. It is hard to get good results with paper which has been rolled. If no space for a broad shelf is available, a hinged shelf may be fastened to a cleat nailed to the wall near the floor, and held upright by means of hooks or a wooden button. The paper may be safely stored behind this shelf, which can be lowered when paper is needed.

Where necessary or desirable, some tools, such as scissors, may be owned by the children individually. Where necessary, some tools which are needed for a short time only may be borrowed for a few days from some friendly patron. The brace and auger bit used in the playhouse is an example of this sort. Where only a few tools are available and the children are obliged to "take turns", there are certain social gains, even if the projects do not progress quite so rapidly as otherwise.

### LIBERAL EQUIPMENT

The lists which follow suggest a liberal equipment for the lines of work included and represent the opposite extreme from the preceding list. Somewhere between the two will be found the possible expense necessary in any particular school. Few schools would find it desirable to install all the types of work suggested in the lists at one time. Therefore, even the liberal estimate would be considerably modified in any instance.

### SOURCES OF SUPPLIES

Hardware—Orr & Lockett Hardware Co., 14-16 Randolph St., Chicago;  
Keen Kutter, Simmons Hardware Co., St. Louis.

Photography—Kenfel & Esser, New York, St. Louis; U. S. Blue Print Co., Chicago.

General School Supplies & Equipment—Garden City Ed. Co., Chicago.,  
Bradley's Kindergarten Materials and School Supplies, Hoover Bros., Kansas City; J. L. Hammett Co., New York.

### TO BE USED IN COMMON BY GRADES 1, 2, AND 3

Work	Article	No.	Price	Cost
Paper and C'dboard	scissors (blunt)	3 doz.	\$3 per doz	\$ 9.00
	rules	3 doz.	5c ea.	1.80
Clay	boards	.....	.....	none
Wood	hammers	1 doz.	25c ea.	3.00
	saws (back)	½ doz.	90c ea.	5.40
	saws (compass)	½ doz.	35c ea.	2.10
	mitre-boxes	1 in each	room	none
Raffia	needles (wooden)	3 doz.	30c perdoz	.90
	needles (steel)	6 doz.	30c perdoz	1.80
	frames	3 doz.	10c ea.	3.60
Blue Prints	frames	1 doz.	10c ea.	1.20
TOTAL .....				\$28.80

**TO BE USED IN COMMON BY GRADES 4, 5, AND 6**

Work	Article	No.	Price	Cost	
Paper and C'dboard	scissors	3 doz.	\$3 per doz	\$ 9.00	
	rules	3 doz.	5c ea.	1.80	
	compasses	3 doz.	15c ea.	5.40	
	drawing boards	3 doz.	50c ea.	18.00	
	punches	4	85c ea.	3.40	
	paper cutter	.....	\$7.50	7.50	
	brushes, (paste)	2 doz.	\$1 per doz	2.00	
	press	.....	.....	4.00	
	zincs, 12x12	3 doz.	30c perdoz	.90	
	bookbinding frames	1 doz.	25c ea.	3.00	
	shears (snips)	1	\$1	1.00	
	boards	.....	.....	none	
	Clay Wood	coping saws	1 doz.	20c ea.	2.40
		hammers	1 doz.	50c ea.	6.00
		saws, (back)	½ doz.	90c ea.	5.40
		saws, (compass)	½ doz.	25c ea.	1.50
		saws, rip (20 in. 8 pt.)	1	\$1.20	1.20
		saws, cross-cut (20 in. 10 pts.)	2	1.20	2.40
try-squares (6 in.)		6	21c ea.	1.26	
planes (smooth)		2	\$1.85	3.70	
brace and bit 10 in sweep		1	1.25	1.25	
vise		2	\$1 ea.	2.00	
chisel—¾ in.		2	60c ea.	1.20	
screw driver		2	20c ea.	.40	
pliers		1	40c ea.	.40	
Raffia		needles (wood)	3 doz.	30c perdoz	.90
		needles (steel)	6 doz.	30c perdoz	1.80
Leather		frames	3 doz.	10c ea.	3.60
		tools	3 doz.	25c ea.	9.00
TOTAL.....		.....	.....	\$100.41	
Grades 1, 2, 3		.....	.....	28.80	
				\$129.21	

# CHARTS SUGGESTING APPLICATION OF EXPRESSIONAL HANDWORK

## PICTURE MAKING AND ILLUSTRATED BOOKLETS

OBJECTS AND SCENES IN CRAYON, PAINT, AND FREE CUTTING

PREPARED BY JULIAETTA ZEITZ

	Grade I.	Grade II.	Grade III.	Grade IV.
Home	Washboard Tub Broom Teakettle Shoes Umbrella	House Furniture chairs tables Igloo Wigwam Tropical Hut	Foreign homes Foreign people Japanese temples Dutch windmills Indian bow and arrow	Homes and Costumes of India Palestine Philippines Modes of travel
Occupations	Spade Horseshoe Anvil Ax Hammer Street car	Hoe Rake Boats Ice-wagon Postman Mill-wheel	Plow Sack of flour Train Bucket of coal Lighthouse Fire engine	Farm products Manufactures Minerals Each group classified as to home foreign
Nature	Trees Leaves Snowflakes Animals rabbits cats bears elephants camels	Stars Moon Trees Fruit Vegetables Animals Birds	Aquarium tadpoles frogs crayfish fish Birds Animals of forest farmyard	Animals Trees Flowers Each group classified as to home foreign
Stories	Mother Goose Little Red Hen The Three Pigs Gingerbread Man Hiawatha The Pied Piper	Little Black Sambo The Cat Who Forgot How to Talk Jack and the Bean Stalk Sleeping Beauty Hiawatha Story of the Pilgrims Story of Columbus The First Thanks- giving	Child's Garden of Verses Town of Musicians Eyes and No-eyes Greek Myths Old Testament Stories History Stories Nature Stories	King Arthur and His Knights Hero Stories Birds and their Nestlings Phyllis Stories -Nature Aladdin Alibaba and the Forty Thieves Greek and Norse Myths

(Continued on page 32.)

CHARTS SUGGESTING APPLICATION OF EXPRESSONAL HAND-  
WORK—CONTINUED

	Grade V.	Grade VI.
Geography	<p>Outline maps of Missouri            Colored to show              corn regions              coal regions              fruit regions              mineral regions              live stock regions              vegetable regions              forests            Animals of North America</p>	<p>Booklets              Our World's Story              Change of Seasons—causes              Revolution and Rotation of                the Earth              Physical Features of North                America            Posters relating to              travel in America              travel in foreign lands              customs, houses, people,                and costumes of foreign                lands              chart showing the standard              time areas              evolution of travel              occupations</p>
Reading	<p>Tanglewood Tales              scenes              characters            Hawthorne's Life-Story            Captains of Industry</p>	<p>Christmas Carol              scenes              characters            Cricket on the Hearth              scenes              characters</p>
Language	<p>Posters              Paul Revere's Ride              Horatius at the Bridge            Letters            Bills</p>	<p>Illustrations for "Travel"              by Stevenson            Rewrite and illustrate stories              Courtship of Miles Standish            Letters            Advertisements</p>
History	<p>Sketches to illustrate              stories of the Romans              stories of the Greeks              stories of the Germans              stories of the English              discovery of America              story of the Pilgrims              colonial days              modern days</p>	<p>The world in Columbus' time            Life of Columbus            The voyage to America            America as he found it            Colonial homes and customs            Indians            Settlements made by              European nations</p>
Nature	<p>Posters              how we are fed              how we are clothed              how we are sheltered            Leaves            Helpful birds            Useful plants            Harmful insects and worms</p>	<p>Posters and charts showing              helpful birds and how to                keep them              harmful insects and how                to get rid of them              cotton, from seed to cloth              wheat, corn, flax, etc.              our minerals and their uses              trees and their leaves</p>

(Continued on page 33.)

# CHARTS SUGGESTING APPLICATION OF EXPRESSONAL HAND- WORK — CONCLUDED

Art	Designs for book covers wall paper rugs leather work costumes hats cross stitch emb'dy calendars gift cards	Designs for booklets rooms wall paper houses rugs clothes Flower posters Plant posters Weed posters Perspective (one point)
Hygiene	What to do in case of fire How to carry a gun How to make a stretcher What to do in case of drowning How to stop bleeding Harmful work of flies	How a sand filter works Street cleaning methods How tuberculosis is spread A model dairy Places where germs breed
Arithmetic	Posters illustrating use of fractions measures money store problems	Figures illustrating fractions Figures illustrating decimals Measures The farm and its products Checks and bills

## SPECIAL DAY PROJECTS

### PICTURE-MAKING AND CONSTRUCTION—GRADES I. to VI.

PREPARED BY JULIAETTA ZEITZ

Columbus Day—Ships, animals, Indians, wigwams, bow, arrow.

Hallowe'en — Ghosts, pumpkins, apples, corn, jack-o'-lanterns, witches, bats, cats.

Thanksgiving—Trees, turkeys, log huts, animals, cradles, corn, wigwam, Indians, pilgrims.

Christmas—Trees, candles, stars, stocking, games, sleds, Santa Claus.

Lincoln's Day—Log cabin, ax, wooden shovel, pig.

Valentine's Day—Valentines, envelopes.

Washington's Birthday—Cherries, hatchets, colts, hats (three corners), coach, sword, raft.

Longfellow's Day—Home and life, illustrations for "Children's Hour", "Miles Standish", and other poems.

Arbor Day—Trees, spades, picks, sprinkler.

Circus Day—Animals, wagons, clowns, chariot, balloons.

May Day—Baskets, flowers, May-pole, queen.

St. Patrick's Day—Shamrocks, snakes, lizards.

Decoration Day—Flags, guns, caps, cannon.

Easter—Rabbits, chickens, eggs, baskets, flowers.

# SANDTABLE AND CONSTRUCTION CHART

Construction	Sandtable	Grade I.	Grade II.	Grade III.
		<p>Indian life Columbus Day Thanksgiving Christmas Lincoln Day Washington Day Eskimo home Three little pigs An apple orchard Playgrounds Local activities Little Red Hen Billy Goat Gruff</p>	<p>Field and Pasture White Cloud Jose the Cuban boy Garden of Verses The Lighthouse The Swing The Story of Ab Eyes and No-eyes St. Patrick's Day St. Valentine's Day</p>	<p>Dopp Series Cave Dwellers Tree Dwellers Robinson Crusoe The Line of Golden Light Mother Ocean's Children The lumber camp A cattle ranch Home life in other lands Japan China Holland</p>
		<p>Play houses Own home Homes of story book friends Three Bears Little Jack Horner The Three Little Pigs</p>	<p>Homes of story book friends Own homes and homes of other children White Cloud Red Riding Hood Swiss Children The Dutch Twins</p>	<p>Own home as doll house Homes of other children Japanese Eskimo Bedouin</p>
Construction	Home Life and House Problems			
	Industrial Life	<p>What is in grocery store dry goods store butcher shop blacksmith shop drug store</p>	<p>Sources of materials in stores Do they come from near home? Do they come from foreign lands?</p>	<p>Co-operative work postoffice fire department How we lived before the stores came Sources of food and clothing Sanitation of store and street</p>

GRADES I. TO IV.—PREPARED BY JULIAETTA ZEITZ

Construction	Sandtable		
	Grade IV.	Grade V.	Grade VI.
	<p>Seven Little Sisters Alibaba and the Forty Thieves How Cedric Became a Knight. King Arthur and His Knights The Children's Cru- sade Coal mine African jungle Fishing industries</p>	<p>Lewis and Clark Expedition Daniel Boone Colonial history tales Relief maps Paul Revere's Ride Panama Canal The Dog of Flan- ders Robinson Crusoe</p>	<p>Home life in for- eign lands Holland Japan Animal life in oth- er lands; in our own country Plant life of the continents Relief maps Transportation Industries Irrigation Sand filter Travel—Stevenson The King of the Golden River</p>
Home Life and House Problems	<p>Puritan home King Arthur's cas- tle Seven Little Sisters Primitive utensils Primitive weapons</p>	<p>Colonial home Colonial utensils Home of Daniel Boone Home of Wash- ington Home of Lincoln</p>	<p>Explorers Homes in Palestine Skyscrapers European homes European vehicles Dolls in foreign cos- tumes</p>
Industrial Life	<p>Local industries Transportation Weights and meas- ures Advertisements Arrangement of stores Care of food</p>	<p>Larger industries shoe factory broom factory Sources of their ma- terial Useful trees (lum- ber) Ornamental trees Sanitation of store and factory Protection of work- ers against fire and accident Panama Canal and locks Mine and mine ma- chinery</p>	<p>Evolution of indus- tries transportation light heat measure time Animals that fur- nish clothing Animals that fur- nish food Plants that furnish clothing Plants that furnish food Manufacture of clothing</p>



# TECHNICAL PROJECTS

CHART PREPARED BY JULIAETTA ZEITZ

Grade I.	Grade II.	Grade III.	Grade IV.	Grade V.	Grade VI.
Poster mounts Booklets <i>type—</i> separate leaves cord fastenings <i>use—</i> drawings cuttings of animals and stories Weaving, one inch measurements Easter baskets Christmas cards Lettering	Calendar pad (rough cover paper) Booklets <i>type—</i> separate leaves cord fastening <i>use—</i> pictures of birds, animals, etc. Bookmarks Weaving, one-half inch measure- ments Lettering	Booklets <i>type—</i> separate leaves Japanese sewing <i>use—</i> drawings stories nature notes Stiff paper box Bookmarks Portfolio (envelope) Lettering	Booklets <i>type—</i> paper back Japanese sewing <i>use—</i> maps stories heroes Penny padholder Clipping case Telephone pad Calendar pad Picture mount Filing case (with two envelopes) Lettering	Booklets <i>type—</i> stiff cover loose leaf <i>use—</i> drawings maps nature notes themes Portfolio Calendar pads (also cloth or wood) Waste basket Box (cardboard) Lettering	Bound books Box (hinged lid) paper Calendar pad (cloth, paper) Corners for blotting pad (cloth) Large portfolio Lettering
Wood	Doll house furniture Toys seesaw doll's swing Games	Games, ring toss Toys jumping jacks doll's teeter Playhouse furniture Blocks (building)	Games, bean bags Toys merry-go-round Furnishings for houses Furnishings for stores	Block print, wall paper, rugs, etc. Mechanical toys Sled Wagon Coping saw work, three-ply animals	Water wheels Electric apparatus Models of machines Athletic apparatus jumping standard hurdles Handkerchief box Stationery case Match case Wood baskets

# TECHNICAL PROJECTS—Continued

Grade I.	Grade II.	Grade III.	Grade IV.	Grade V.	Grade VI.
Doll clothes Furnishings for doll house Bean bags Weaving rugs for doll house	Rag rugs for doll house Pillows Doll's one-piece dress Dustcloth	Cross stitch towel Iron holders Doll skirt, apron, hat Weaving, for play house	Rugs, woven plain stripes in border Darning stitch on towel pillow Cross-stitch cur- tains for play- house Bags for paints and scissors	Weaving, vertical stripes, spot Simple garments apron handkerchief Table runners Bags Stitches French seams hemstitching	Weaving, diagonal or twill, plaid Stenciling table run- ners, curtains Simple embroidery Crocheting Tatting Hemstitching Simple garments
Fruit Animals Sandtable figures	Animals Objects Sandtable figures	Figures for sand- table and play- house	Tiles Bowls	Tiles Bowls Ink wells Candlesticks	Inkwell, lids Candlesticks Vases
	Rugs for doll house Pillows for doll house Braid in three colors	Doll house furnish- ings Mats	Mats Trays Baskets	Trays Baskets Candle shades	Jardiniere Flower baskets Tea mats (sets)
				Pen wiper Needle book	Blotter cover and corners Purse Cardcase Scissors case



# THE UNIVERSITY OF MISSOURI BULLETIN

VOLUME 17    NUMBER 22

EXTENSION SERIES 19

EDITED BY CHARLES H. WILLIAMS

## CORRESPONDENCE COURSES IN HIGH SCHOOL SUBJECTS

A NEW DEPARTURE FOR  
UNIVERSITY EXTENSION



Issued Three Times Monthly: Entered at the Post-office, Columbia, Missouri, as Second Class Matter

UNIVERSITY OF MISSOURI  
COLUMBIA, MISSOURI  
September, 1916.

THE UNIVERSITY OF MISSOURI BULLETIN,  
EXTENSION SERIES; EDITED BY  
CHARLES H. WILLIAMS, SECRETARY OF  
UNIVERSITY EXTENSION; ENTERED AS  
SECOND-CLASS MATTER AT THE POST-  
OFFICE, COLUMBIA, MISSOURI

10,000

# CORRESPONDENCE COURSES IN HIGH SCHOOL SUBJECTS

The University of Missouri thru the United States mail gives you a chance to work for high school credit if you are unable to attend a high school.

These courses are prepared and given by members of the University faculty. The instruction in each case represents a definite amount of work with credit equivalent to that of similar courses given in accredited schools.

**Who May Enroll.** Any one may enroll who has completed the first eight grades of the common school course, or their equivalent. However, students enrolled in a high school are not permitted to take these courses during the regular session. Neither are they permitted to take them during summer vacation without the consent of their superintendent or principal.

## PURPOSE OF THESE COURSES

**General Education.** To provide a high grade of instruction for persons who do not find it convenient to attend school.

**University Entrance.** To help persons who are desirous of entering the University, or other school, but are a few units short of the entrance requirements, to complete such requirements. Credit will be given for this work by the University just as for work in an accredited high school. Most other schools will give similar credit.

**Teachers' Certificates.** To enable teachers and those desiring to teach, without leaving their homes and while engaged in other work, to comply with those provisions of the school law which require as a prerequisite for examination for first and second grade county certificates after 1912, 1914, 1916, and 1918, one year, two years, three years, and four years, respectively, of high school work or its equivalent. This work will be recognized by county superintendents and by the State Department of Education as fulfilling this requirement.

To give teachers who are working for state certificates, while engaged in teaching or other work, an opportunity to prepare for examinations.

Grades made in these subjects do not count in lieu of examinations for state or county certificates, but the work is so thoro in character that it affords an excellent review for such examinations.

## PROCEDURE

Make up your mind to investigate this opportunity; then write to the Secretary of University Extension, University of Missouri, Columbia, Missouri, for an application blank. Fill out the blank fully with the information called for and return it. If your application is approved you will be notified and instructed to remit the required fee to the Secretary of University Extension. You will then be enrolled and lessons with instructions for study, methods of preparation, and directions for return will be sent you. The lessons should be returned to the Secretary of University Extension. They will be graded and sent back to you with such explanations, corrections, and suggestions as seem necessary. Questions, assignments for reading, and lists of books will be furnished thruout the course so that each student will have adequate guidance and assistance. Questions pertaining to the subject under study are at all times encouraged.

**The High School Unit.** One year's work in a high school usually consists of four subjects; for example, the first year's work might consist of ancient history, English, algebra, and physical geography. The student recites in each of these subjects five times per week, for at least thirty-six weeks. Each recitation must be at least forty minutes in length. One such subject, for example, ancient history, studied for at least thirty-six weeks is called a "unit." Thus, four units constitute a full year's work in the high school. Four years are necessary to complete a high school. Accordingly, in most high schools sixteen units (or in some cases fifteen units) are required for graduation. For entrance to the College of Arts and Science, the College of Agriculture, and the School of Engineering of the University of Missouri, fifteen units are required. Of these, three must be in English, one in mathematics, and two in foreign language. For entrance to the College of Agriculture fifteen units are required, three of which must be in English and one in mathematics. Graduates of fully accredited high schools will be admitted to the College of Arts and Science, the School of Engineering, and the College of Agriculture without reference to particular subjects offered for admission. For entrance to the other divisions of the University, two years of work in the College of Arts and Science or its equivalent are required.

**Cost of Correspondence Courses.**

One-half unit course .....	\$ 7.50
One-unit course .....	15.00
Two-unit course .....	30.00

**Time of Preparation.** Each unit of work by correspondence consists of about forty assignments with a minimum time of preparation of eight to ten hours each. Two hours of study a day should enable the student to finish one unit in forty weeks. However, any subject may be pursued as rapidly as is consistent with good work. By work-

ing more than this amount a day, a unit may be finished in less time than forty weeks.

### TEXTBOOKS

The enrollment fees barely cover the actual expense of conducting the courses, hence they do not include textbooks. Texts may be ordered from the publishers, or from the University Co-Operative Store or the Missouri Store, Columbia, Missouri.

### FINAL EXAMINATIONS

Whether a written examination will be given at the close of any particular course depends upon the decision of the particular instructor and department concerned. The right is always reserved to give examinations in case the department deems it advisable to do so. In cases where it is inconvenient for the student to take an examination at the University, arrangements must be made by him with some person acceptable to the University, such as a city superintendent of schools or county superintendent of schools, to give the examination. In these cases no compensation can be made to the person giving the examination, as the fees charged for correspondence work are not sufficient to cover this additional expense.

### COURSES OFFERED

**Grammar.** One unit. A course dealing with the principles of English grammar, including sentence analysis. Text, Kittredge and Farley, *Advanced Grammar*, 80 cents.

**Composition.** One unit. The student will be expected to develop during this course the ability to express himself coherently and correctly. He will be expected to master the forms of writing, spelling, punctuation, and sentence and paragraph structure. Texts, Woolley, *Handbook of Composition*, 75 cents; Woolley, *Exercises in English*, 60 cents; Palmer, *Self-Cultivation in English*, 10 cents.

**Literature.** One unit. The work of this course consists of the study of thirteen of the classics on the college entrance list, and of Tisdell, *Studies in Literature*, 90 cents.

**History of English Literature.** One unit. This course includes not only the reading of classics but in addition a rather complete study of the history and development of English literature. Texts, Tisdell, *Studies in Literature*, 90 cents; Newcomer and Andrew, *Twelve Centuries of English Poetry and Prose*, \$1.75; Greene, *Historical Chart of English Literature*, 25 cents; Phelps, *Literary Map of England*, 10 cents.

(Not more than four units in English may be offered for entrance).

**Elementary Algebra.** One unit. Elementary algebra, including the elementary operations on polynomials and fractions, the solution



## 6 CORRESPONDENCE COURSES IN HIGH SCHOOL SUBJECTS

of single and simultaneous linear equations, simple factoring, simple powers and roots, and the solution of numerical quadratic equations. Text, Hedrick, *Algebra for Secondary Schools*, \$1.00.

**Complete Elements of Algebra.** One and one-half units. Complete elements of algebra, including the above, and in addition thorough work on quadratic equations, complete work on radicals and fractional exponents, progressions, and logarithms. Text, Hedrick, *Algebra for Secondary Schools*, \$1.00.

**Plane Geometry.** One unit. The usual standard course. Text, Ford and Ammerman, *Plane Geometry*, 80 cents, or Ford and Ammerman, *Plane and Solid Geometry*, \$1.25.

**Solid Geometry.** One-half unit. The usual standard course. Text, Ford and Ammerman, *Solid Geometry*, 80 cents, or Ford and Ammerman, *Plane and Solid Geometry*, \$1.25.

**Trigonometry.** One-half unit. This course covers a half-year's work. It includes the elementary notions, logarithms, functions of obtuse angles, solution of right-angled triangles, and the methods essential for the solution of oblique triangles. Some familiarity with the formulas involving the functions of the angles is also desirable. Text, Kenyon and Ingold, *Trigonometry*, \$1.35.

**Ancient History.** One unit. The history of the Oriental, Greek, and Roman periods, as given in a standard high school. Texts, Westermann, *Ancient Nations*, \$1.50; Botsford, *Source Book of Ancient History*, \$1.30.

**Medieval and Modern History.** One unit. Text, Robinson, *European History*, \$1.60.

**English History.** One unit or one-half unit. The political and social history of the English people. Texts, Cheyney, *Short History of England*, \$1.40; Trenholme, *Outlines of English History*, 50 cents. A half unit will be given for work of a less advanced character.

**American History.** One unit or one-half unit. The history of the Colonial and United States periods. Text, Muzzey, *An American History*, \$1.50.

(A half unit in English or American history will be accepted for entrance only when accompanied by at least one unit in European history.)

**Civil Government.** One-half unit. A study of the chief organs of local, state, and national government, their relations to each other, and the important functions assigned to each group. Some attention will be given to their historical development. The text used will be Garner, *Government in the United States*, \$1.00. No credit will be given toward entrance unless the student offers at least one-half unit in American history.

**Beginners' Latin.** One unit. Texts, Roberts and Rolfe, *Essential Latin Lessons*, \$1.00; Greenough, D'Ooge and Daniell, *Second Year Latin*, \$1.25.

**Caesar's Gallic War.** One unit. Second year Latin. Texts, Greenough, D'Oóge and Daniell, *Second Year Latin*, \$1.25; Harkness, *Complete Latin Grammar*, \$1.25.

**Second Year German.** One unit. This course calls for about two hundred pages of moderately difficult reading, chiefly prose, with constant practice in written reproduction of selected portions.

**Physical Geography.** One unit. A careful study of air, ocean and land, with individual experiments and observations by the student on all subjects practicable. Text, Salisbury, *Elementary Physiography*, \$1.30.

**Agriculture.** One unit. The text to be used in this course is Warren, *Elements of Agriculture*, \$1.10. Individual experiments and observations by the student, together with the study of several bulletins, make up an important part of the work.

**Economics.** One-half unit. This course will take up the leading facts and principles of economics, including such subjects as division of labor, the factors of production, the laws of diminishing returns, demand and supply, value and price, wages, interest, rent and profits, credit, taxation, regulation of monopolies, and international trade. Texts, Johnson, *Introduction to Economics*, \$1.50; Davenport, *Outlines of Elementary Economics*, 80 cents.

(If regular University courses are desired, write for the Announcement of the Extension Division for 1916-17. The University offers correspondence courses in the Colleges of Arts and Science and Agriculture, and in the School of Education, as well as in high school subjects as here announced.)

## GENERAL INFORMATION

The cost of courses by correspondence is about one-third that of the same courses, including room and board, to students actually attending the University.

Correspondence work is as thoro as that done in actual attendance.

Courses may be begun any time during the year.

For admission to correspondence courses no preliminary examination is required.

Students are not allowed, except by special permission and then only when they are carrying less than the maximum amount of work, either to begin or to continue correspondence courses while taking work in residence at the University of Missouri or at any other school.

During an instructor's vacation a substitute will be provided to carry on his course whenever possible.

The maximum amount of work that may be done by correspondence is limited to two and one-half units for any one calendar year.

The time allowed for completing a course is one year from date of enrollment, except by special permission.

## 8 CORRESPONDENCE COURSES IN HIGH SCHOOL SUBJECTS

No fees are refunded on account of the inability of a student to complete a course or for any reason except at the discretion of the proper University authorities.

The University of Missouri belongs to all the people of the state, and is desirous of serving you. Now is your opportunity to make use of it. It is prepared through the Extension Division to go to you.

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All remittances should be made payable to Charles H. Williams, Secretary of University Extension, University of Missouri, Columbia, Missouri. No one is expected to send any fees until notified that his application has been approved.

For information regarding correspondence courses and for application blanks, write to

CHARLES H. WILLIAMS,  
Secretary of University Extension,  
University of Missouri,  
Columbia, Missouri.

# THE UNIVERSITY OF MISSOURI BULLETIN

VOLUME 17    NUMBER 25

EXTENSION SERIES 22

EDITED BY CHARLES H. WILLIAMS

## BETTER HIGHWAYS

BY

E. J. McCAUSTLAND

*DEAN OF THE SCHOOL OF ENGINEERING*



UNIVERSITY OF MISSOURI

COLUMBIA, MISSOURI

OCTOBER, 1916

THE UNIVERSITY OF MISSOURI BULLETIN, EXTENSION SERIES; EDITED BY CHARLES H. WILLIAMS, SECRETARY OF THE EXTENSION DIVISION; ENTERED AS SECOND-CLASS MATTER AT THE POST-OFFICE, COLUMBIA, MISSOURI 5000

# BETTER HIGHWAYS

President Woodrow Wilson says: "The efforts which are now being made in most of the states for the adequate improvement of public roads should have the earnest support of every man who has the development of the states and of our Nation at heart. \* \* \* Good roads are essential for a better agriculture, for the satisfactory marketing of farm products, for improvement in our rural schools, and the making of rural life more interesting and attractive socially. The improvement of rural conditions in these districts is a matter of concern not only to people living in rural districts but also to urban people.

"The problems of road construction and maintenance are so difficult as to require the highest order of ability on the part of road officials, and I, therefore, note with much satisfaction the increasing disposition of the states to establish expert state highway departments."

With this introduction by President Wilson, are offered some notes that may be of general interest.

## WHAT IS THE ECONOMIC TYPE OF HIGHWAY IMPROVEMENT?

In choosing a material for so-called "permanent" highway construction, the relative advantages of the different types is a matter requiring careful consideration.

William Marr, Chief Highway Engineer of the Illinois Highway Commission, Springfield, Illinois, says: "For main rural highways, *if the traffic and the type are suited*, the cost of service is practically constant for all types of wearing surfaces. That is, the total cost of roadway per square yard, per year, per ton carried, is the same for all types and remains constant for an indefinite period of time." It must be kept in mind that the above statement has reference only to such material as brick, asphalt or concrete. It would not be a fair statement in comparison of earth, gravel and broken stone roads. Mr. Marr further says: "It is wise to keep the first cost as low as possible to meet the needs of traffic and invest the savings in a maintenance fund. Plan the improvement to meet the demands of traffic only; at some later time the fund saved may be used to resurface the road in order to meet the demands of an increased traffic." This is the statement of a general truth, and its full acceptance would be of great advantage in the wide revival of interest in road building throughout the country.

A recent issue of the *Engineering News* says: "It is a fact that the question of successful maintenance today rests upon the money available and the willingness of the men to work, more than upon any physical characteristics of the road.

"It must be clearly recognized that maintenance of practically all types of roads must start as soon as the road is opened to traffic."

### **WHY IT IS GOOD POLICY TO BUILD THE HIGHEST TYPE OF ROADS CONSISTENT WITH THE FINANCIAL ABILITY OF COMMUNITIES**

If communities could be depended upon to take an intelligent interest in the maintenance and repair of highways, it can be demonstrated that there would be a financial saving in building roads of less permanent materials.

A first low cost, with high annual maintenance and repair charges would give a less total annual charge than would a high first cost with less expense for maintenance and repair.

It is a fact, however, that human nature everywhere has a tendency to defer all renewals or reconstruction until it is forced. Hence with cheap original construction, and little attention to maintenance, roads of less permanent materials are almost sure to be quite unsatisfactory. In other words, the people themselves, by their careless and uninterested attitude towards this very important public work, make the expense more than it normally should be.

As illustrating this matter, an example is taken from a recent report of the city engineer of Seattle in reference to an increased water supply. The pipes delivering the water to the city are made of wooden staves, and when they reach an age of from 15 to 20 years, much trouble is experienced from breakage of the staves with consequent leakage and shortage of supply. New concrete and steel mains are recommended to replace the wood stave, at a cost of a million dollars in excess of the sum necessary to replace the wood stave pipe every 12 years and thus insure just as uninterrupted service as could be expected from the more permanent materials. But the city engineer says, "in view of the tendency of human nature to put off reconstruction as long as the old lines hold out," steel and concrete are recommended rather than wood even with the recognition of the greatly increased cost.

The same argument holds with as great force in matters of road building. Wide experience shows that without question it is good policy to build the highest type of road which the financial ability of the community can afford.

## **MONEY VALUE OF ADOPTING A DEFINITE SYSTEM OF ROAD CONSTRUCTION**

A certain county in Missouri had, in 1915, an assessed valuation of \$4,500,000. The road tax levy on this valuation was twenty-five cents per \$100, yielding an income of \$11,250. This money was expended in all parts of the county, without plan or system, and was, in every sense of the term, wasted.

Now if this county would issue \$100,000 worth of bonds, payable in twenty years at five percent interest, this sum would build at least twenty-five miles of good gravel road and the cost would be as follows:—

First yearly payment on principal .....	\$5000
First yearly payment on interest .....	\$5000
Or a total first year payment of .....	\$10000

The second year this payment would be reduced to \$9750 and the third year to \$9500 and a like reduction over the full period of the life of the bonds. In this case the payment of a yearly sum less than the actual road levy would insure twenty-five miles of good road, where now the money is expended and there is no return in the form of better roads.

## **COST OF HIGHWAYS BY THE BONDING SYSTEM**

In 1914, Vermillion County, Illinois, voted \$1,500,000 in bonds for the construction of 174 miles of paved road to be constructed in 1916-17.

These bonds are twenty-year serial four percent, and are to be retired at the rate of \$75,000 per year. The general average payment per year will be \$103,500. This is raised by a direct tax of 28½ cents on each \$100 of the 1913 assessed valuation.

The average annual cost per acre on the farm lands amounts to 8¾ cents, the average assessed value per acre being \$30.63.

Clay County, Missouri, on June 24, 1916, voted \$1,250,000 to construct a system of 202 miles of road. The estimated annual cost to the land benefited is 10 cents per acre.

## **USE OF CERTAIN STATE FUNDS FOR ROAD BUILDING ACCORDING TO DEFINITE PLANS**

Something like 105,000 automobiles are registered in Missouri for the year 1916. If these cars are taxed on an average of \$10 each, there is an income to the State of \$1,050,000. This is a fund, which if properly applied would build at least 100 miles of good roads, a total of 500 miles if extended over a period of five years. Can we afford to fritter away these funds as is now being done? If to this fund be added a levy of 20 cents on each \$100 of assessed valuation of the farm property of the State (\$600,000,000 or 40% of the 1910



estimate of \$1,500,000,000) an amount of \$1,200,000 could be added to form a grand total of \$2,250,000 yearly for the permanent improvement of Missouri highways.

### **SOME POINTS GATHERED FROM GOVERNMENT REPORTS**

*Cost of Transportation.* A bushel of wheat can be hauled from New York to Liverpool, more than 3000 miles, for considerably less than four cents. It will cost the farmer fully this much to market his wheat over the ordinary unimproved country roads if he lives five miles from town. Why vote for ship subsidies and neglect the first stage of the journey? If eight cents per bushel is the transportation charge from the farm producer to the European consumer, a copper saved on the way to the railroad station will buy as much sugar as if saved on the Liverpool leg of the journey.

*Population Changes Due to Travel Conditions.* In twenty-five counties of the United States, selected at random, possessing an average of only fifteen percent improved roads, the decrease in population averaged 3,112 for each county for a ten-year period.

Contrasted with this, the records in twenty-five counties having an average of 40 percent improved roads, the increase in population has averaged 31,095 to the county.

# THE UNIVERSITY OF MISSOURI BULLETIN

VOLUME 18      NUMBER 8

EXTENSION SERIES 23

EDITED BY CHARLES H. WILLIAMS

## THE FEEDING OF CHILDREN

BY

HILDEGARDE KNEELAND

*INSTRUCTOR IN HOME ECONOMICS*

Kansas City Public Library



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# THE FEEDING OF CHILDREN

Food of the proper kind given in the proper way is the right of every child. Without this he cannot develop a healthy body which will serve him well through life. He needs food to give him energy for his activity, to make him grow, and to keep his body in good working order. And this food must be in the most digestible form, for a child's digestive system is not as well developed as that of older persons and is more easily upset. To allow a child to eat the same food as the adults of the family is just as foolish and dangerous as to allow him to undertake a grown person's work. A mother has no reason to be proud that her child can "eat everything"; she should rather blame herself because she has endangered his health by giving him food which is not suited to the needs and strength of his growing body.

## WHAT FOODS TO USE

*Milk* is the most important food for all children as it contains in the most available and digestible form protein for tissue building, mineral matter for the bones, blood, and soft tissues (especially calcium or lime for bone formation), growth-promoting substances, and fat and sugar for energy. The first rule in feeding children, therefore, should be "a quart of milk a day for every child." Whole milk is, of course, most desirable, but skim milk may replace this in some milk dishes, such as milk soups, cocoa, or cereals cooked with milk, provided butter is used somewhere in the diet. Everyone realizes now-a-days that great care must be taken to see that the milk is pure; it is real economy to pay a higher price, if necessary, for a good grade. Whenever there is the slightest question concerning the purity of the supply, one should render the milk safe by heating it from twenty to thirty minutes at a temperature of 145° Fahrenheit, or by boiling it for not more than three minutes. When such treatment is necessary, it is better to buy the fresh milk and heat it in the home where it can be quickly cooled and properly cared for after heating.

Condensed or evaporated milk should not be used unless every effort to obtain fresh milk fails. The use of some fresh food, such as fruit pulp or juice, is especially important for little children when heated milk is used.

If the child is fond of it, the milk may all be taken as a drink or on cereals or bread, but with many children it is necessary to "hide" part of or even all the necessary daily quart in milk dishes, such as milk soups, thickened with a little flour and flavored with strained vegetables, custards made with junket tablets or eggs, simple ice creams and milk sherbet, simple cereal puddings made with milk, or the plain cereal cooked with milk instead of water. After the child is

five years old, a weak cocoa may be made with milk to give variety. For the school child this may serve as a hot drink before he starts off on winter mornings, and will do away with the only possible excuse for giving tea or coffee. The folly and injustice of allowing little children to drink tea or coffee is generally recognized by all intelligent people at the present time.

*Bread and other cereal foods* should form a large part of the child's diet, since they provide fuel in a very cheap and digestible form. The cereal products in which the germ and all or part of the outer bran coats are retained should be frequently used, such as graham or whole wheat flours, rolled or cracked wheat, oatmeal and rolled oats, and unpolished rice. For the outside and the germ of the grain are valuable sources of mineral matter and growth promoting substances, and the laxative effect of the bran particles is usually found beneficial. A dish of thoroughly cooked cereal should be given once or twice a day, cooked with just enough salt to bring out the flavor, and served with milk or thin cream and with very little sugar,—better with none at all.

*Bread* in some form is usually served three times a day and this is desirable, as it well deserves to be called the "staff of life." It must not, however, be hot and moist; griddle cakes, hot biscuit, muffins, or light bread fresh from the oven should never be given to little children. A good guide is to make sure that the bread is dry enough to give the child something to chew on. Toast and twice baked rolls are obviously the best and should be freely used.

*Eggs* are especially valuable in the diet of children and, if the pocket book allows, one should be given daily after the third year and once or twice a week before then. Care must be taken that in the cooking they are not made indigestible. For little children it is best to serve them plain, soft-cooked in the shell, or poached; later on scrambled eggs, omelettes, custards, and other egg dishes can be given, provided a high temperature and much fat in cooking is always avoided. The yolk of the egg is especially high in nutritive value, being rich in iron for building up good red blood and in other substances very necessary for growth.

*Meat* should not have an important place in the child's diet. Many authorities believe it best to give no meat at all until the child is seven or eight years old. Whether this opinion is accepted or not, it is well to remember that eggs and milk contain the same substances as meat in a form which is more digestible and less liable to putrefaction, and that in addition they are richer sources of other nutritive material for the body. When meat is given, it should appear at only one meal, and an effort should be made to use as often as possible the lean, tender kinds, such as chicken, beef, lamb, oysters, cod, haddock, and halibut. The use of meat juice and broth is especially to be questioned as they have very slight nutritive value, acting chiefly as stimulants to the flow of the digestive juice. And since their high flavor is very

apt to make the child lose his taste for the all-important milk, the expenditure of money in this way is neither necessary nor desirable.

*The other meat substitutes*, dried beans, peas and lentils, cheese, and nuts should not be given to little children, but with children over eight they can take the place of the egg or meat occasionally. As they are all concentrated foods, special care must be taken to prepare them in a digestible way. Nuts should be chopped, and are best if mixed with starchy foods, as with bread crumbs or cereals in a nut loaf. Cheese should either be grated or melted at a low temperature with starchy foods; cottage cheese is, of course, an exception to this rule as it contains less fat and more water than other cheeses. The dried legumes provide a large amount of nourishment at a very low cost and may be made very digestible by thorough cooking and straining through a sieve to remove the outer skins. When prepared in this way they may be given to little children.

*Fruit* is not used as freely in feeding children as its real nutritive value warrants. It is an excellent source of mineral matter, especially of iron for the blood; it contains those substances which are necessary in small amounts for normal growth and a healthy condition of the body; it serves as "ballast" and as a mild laxative, promoting intestinal hygiene; and it provides sugar for energy and for satisfying a desire for sweets in a most digestible form. During the first year it should be introduced into the baby's diet in the form of fruit juice, and throughout childhood should be given once every day, and after the second year, twice a day whenever possible. Strained orange or prune juice is usually found most satisfactory at first, and variety is neither necessary nor desirable. However, after the second or third year, almost any ripe, mild fruit can be used or a dried fruit which has been well soaked and slowly cooked in a small amount of water. Until the eighteenth month, the amount should be limited to a few tablespoons of juice given by itself between the first and second morning feedings. After that age, either juice or cooked and strained pulp can be given in somewhat larger quantities, forming the first food in the morning meal. By the third year, tender, well-ripened fruit may be given raw, but care must be taken that it is not swallowed in large pieces.

*Green vegetables*, like fruit, should be used more freely than is the custom. These also should be strained until the third year, after which they can be mashed or chopped; raw vegetables should be given with much care before the seventh year. The choice should at first be limited to the tender and mild flavored vegetables. Spinach is especially valuable because of its high iron content; asparagus tips, green peas, young carrots, and beets may be used early; and string beans, squash, celery, and tender onions may soon be added to the list. Cabbage, green corn, and cucumbers are to be avoided. Potatoes are, of course, excellent for children and may be introduced during the second year, but they must not be allowed to replace the green vegetables which should appear at least once in every day's menu.

*In cooking fruits and vegetables* as small an amount of water as possible should be used and this should be cooked down and served with the food, because the mineral matter which gives them their greatest nutritive value is soluble and to a great extent dissolves out into the water. Boiling can, therefore, be advantageously replaced by baking and steaming, and, whenever the water is discarded, the vegetable should be cooked whole without peeling or scraping. Both fruits and vegetables should be prepared simply, only sugar, salt, or butter being added during the first few years, and these in the smallest amounts necessary to make them palatable. By the third year, cream sauce and well made gravy can be given occasionally to most children; high seasoning and frying must always be avoided, as should gravy containing a large amount of fat.

*Water* is not popularly considered a food, probably because it is cheap and abundant. Yet it is of tremendous value in nutrition; it forms the greatest part of the tissues, blood, and digestive juices, keeping these in good working condition; it regulates the loss of heat through perspiration, and it carries away the waste products of the body's activity. The liberal drinking of water is, therefore, one of the most important dietary habits, and every child should be trained to drink a glass or more on rising, at each meal, occasionally between meals, and on going to bed. The prejudice against drinking water at meals has no scientific basis, provided it is not allowed to wash down the food before it has been chewed. Cold water is usually best, but the drinking of much ice water must never be allowed.

### WHAT FOODS TO AVOID

If a child is to be well fed, it is not sufficient to see that he is given the foods which are mentioned above; it is also necessary to see that he is given nothing else! He does not need any other foods, and trouble is almost always sure to result if they are added, for these other foods are usually harder to digest. It cannot be too often emphasized that a child's digestive powers are not equal to those of an adult and must be developed gradually. Furthermore, by giving other foods, too great a variety of flavors is introduced, and a liking may be developed for highly flavored foods, such as meats, sweet desserts, or rich dishes, which may make it very difficult to get the child to take the large amount of milk and plain cereal foods which must form the greatest part of his diet. We often hear people say: "Oh, but a little bit can't hurt him." They are making a serious mistake in failing to realize that it often takes only a "little bit" to upset a child's digestion and that, even when no immediate trouble results, the digestive system may be over-taxed or a taste for the wrong kind of food may be developed, either of which may cause endless trouble later on.

The wise mother will therefore see that her child's diet is uniformly simple, low-flavored, and easily digested. This means that she must avoid fried foods containing much fat, such as rich cakes, pastry,

gravies, pork, ham, chocolate, and nuts. Fat checks the flow of the digestive juice of the stomach and, by coating other particles of food, prevents them from being acted upon by this juice, thus making digestion in the stomach harder and slower. Some fat is, of course, necessary and should be obtained chiefly from whole milk where it occurs in easily digested droplets. This, in addition to a moderate amount of butter, and for the older children an occasional serving of bacon, or later still of cheese, will furnish sufficient fat in the most suitable forms.

Much sugar must also be avoided as it is apt to cause digestive disturbances by irritating the lining of the stomach and by fermenting. Its high flavor is also objectionable as it tends to make the low-flavored foods unwelcome, or, if it is added to these, as with cereals, bread, or cooked fruit, it hides the natural flavors of these different foods in which there is far more variety than we allow ourselves to realize. Such a sameness of flavor soon becomes monotonous and to overcome this, instead of lessening the sugar, we tend to add still more in a vain and harmful attempt to satisfy our palates. This same undesirable result is apt to follow the constant use of any seasonings, such as salt, pepper, spices, vinegar, etc., all of which must be used sparingly, if at all, in preparing the child's food.

Sugar need not, of course, be entirely ruled out of the diet but until the fifth year every effort should be made to do without it. When it is introduced, the less concentrated forms should be used; plain cookies, crackers and cake, and simple puddings and custards are much to be preferred to sweeter, richer ones or to preserves, jellies, syrups, and candy. When the child will not be satisfied without the sweeter foods, dried raisins, currants, dates, or figs will often be as well-liked as candy and are far more nutritious because of their high mineral content. Much of the harm resulting from eating sweets will be done away with if they are taken at the end of a meal rather than at the beginning of or between meals, for at this time the stomach is not so easily irritated by them, and the child's appetite will not be spoiled before he has eaten the other foods which are necessary for him.

A further guide to securing digestibility is to remember that a food to be digested must be dissolved, and therefore should divide up easily. For this reason, foods which wad up when chewed like griddle cakes and hot bread, tough foods like over-cooked cheese and meat, and solid foods like nuts, cheese, or hard-cooked eggs which have not been chopped up or grated, are hard to digest and should never occur in a child's diet.

Individual peculiarities will occasionally be met with which make it impossible for some children to eat certain foods which are well suited to most children. Some, for instance, are easily upset by eggs, others by fat, others by fruit, and so on. It is important, therefore, to introduce new foods into the diet one at a time, watching the



effect, and to avoid the use of any which are found to cause trouble. But the mother must be careful not to jump too hastily to the conclusion that her child cannot eat a certain food which she had every reason to expect would be good for him; the trouble will seldom be found to be with those foods which most children thrive on, but usually with foods which they should not be given; or with the way in which the food is served.

### HOW TO GIVE THE FOOD

Regularity is of supreme importance in the feeding of children. The mother must carefully determine how many meals her child should have, at what hours they should come, and how much of the day's food should be given at each meal, and she must rigidly follow this schedule if her child is to have the best chances for digesting his food well. The human digestive system, and especially that of a child, works best after it gets into a regular "working rhythm," and additional strain is put upon it if meals are not taken "on the dot," if the size of the meal varies from day to day, and above all if the stomach is made to work overtime because of eating between meals.

*The number of meals during the second year should be four a day; by the third or fourth year the usual three meal schedule may be adopted, but an extra meal should regularly be given in the middle of the morning or afternoon to active children who become hungry at these times. This should consist of milk with a piece of bread and butter or a couple of simple crackers, which will be eaten with relish if the child is really hungry. By giving such wholesome food regularly between meals, the child will not be tempted to satisfy his hunger at odd hours with candy, cake, or any other "bite" he can get hold of. The hours for the meals can be arranged to suit the convenience of the mother and the time when the child takes his naps.*

The evening meal for children under eight should be a light supper, finished by six o'clock, as a heavier or later meal would interfere with the early bedtime.

Training in eating slowly and chewing thoroughly should be very carefully given as it will do much to favor good digestion at the time and to develop good eating habits for future years.

A pleasant, restful atmosphere during meal times should also be carefully maintained, not only for its own value but also because of its great influence upon the ease of digestion. An uncomfortable, cranky, or tired child is not in a good condition for digesting a meal.

One of the hardest problems often comes in dealing with the likes and dislikes of the child himself, and every precaution must be taken to prevent the development of undesirable whims concerning food. Much depends upon the attitude of the mother; if she thinks that an occasional "taste" can do no harm, or likes to humor the child at times, she should not be surprised if she presently has to deal with a strong

fondness for the wrong kind of food or a distaste for the right kind. It is usually much harder to control what the child eats if he takes his meals at the family table where he constantly sees and may be tempted by foods which are unsuitable for him. Whenever this is necessary, the intelligent cooperation of the whole family is necessary for the development of the right attitude toward food and wholesome habits of eating, which is one of the most important parts of the child's training.

### DIET FOR A CHILD TWO YEARS OLD

6—8 A. M.	Fruit juice or pulp	2-4 tbsp.
	(Orange, prune, apple, with little or no sugar)	
	Cereal, thoroughly cooked and strained, with little or no sugar	$\frac{1}{4}$ cup
	(Cereals containing most or all of the grain are preferable, such as oatmeal, rolled oats, or wheat, cracked wheat, unpolished rice, etc.)	
	Milk, for cereal and to drink, slightly warmed	1 cup
	Toast or stale bread, graham or whole wheat frequently, or zwiebach, (little or no butter)	1 slice
10 A. M.	Milk, slightly warm	1 cup
	Toast, etc., as above	1 slice
2 P. M.	Egg yolk (or whole egg) soft cooked	1 yolk
	Green vegetable, cooked and strained	1-2 tbsp.
	(Spinach, green peas, asparagus tips, beets, carrots, string beans)	
	Toast, etc., as above	1 slice
	Milk, slightly warm	1 cup
5:30 P. M.	Cereal, as above	$\frac{1}{4}$ cup
	Milk, for cereal and to drink, slightly warm	1 cup
	Toast, etc., as above	1 slice

### DIET FOR A CHILD FIVE YEARS OLD

6—8 A. M.	Fruit juice or pulp	$\frac{1}{2}$ cup
	(Any tender, ripe, mild fruit, with little or no sugar)	
	Cereal, thoroughly cooked	$\frac{1}{2}$ cup
	(Served with top milk and little or no sugar. Cereals containing most of or all the grain are preferable, as oatmeal, rolled oats, and wheat, cracked wheat, unpolished rice, etc.)	
	Milk, for cereal and to drink	1 cup
	Toast or bread at least a day old, graham or whole wheat frequently	1-2 slices
	Butter for toast or bread	$\frac{1}{2}$ tbsp

10 A. M.	Milk	1 cup
	Toast, bread, zwiebach, or graham crackers	1 slice or 2 pieces
12—1 P. M.	Egg, coddled, poached, scrambled	1 egg
	Milk, to drink or in a vegetable soup	$\frac{3}{4}$ cup
	Potato, baked and mashed	1 potato
	or	or
	Rice, boiled	$\frac{1}{3}$ cup rice
	Green vegetable, cooked and strained, or mashed	$\frac{1}{4}$ cup
	(Spinach, green peas, asparagus tips, beets, carrots, string beans, onions, stewed celery, turnips, squash, and other mild, tender vegetables)	
	Toast or bread, as above	1-2 slices
	Butter	$\frac{1}{2}$ tbsp.
	Dessert:	$\frac{1}{2}$ cup
	Junket or egg custard	
	or	
	Simple pudding, as rice, bread, tapioca, cornstarch	
	or	
	Simple ice creams, milk sherbets, or frozen custards	
5:30 P. M.	Milk, as cream of vegetable or with toast, bread or cereal	1 cup
	Toast, or bread, as above	1-2 slices
	or	or
	Cereal, as rice, mush, etc.	$\frac{1}{2}$ cup cereal
	Fruit, stewed or baked, with little or no sugar	$\frac{1}{2}$ cup

## DIET FOR A CHILD EIGHT YEARS OLD

6—8 A. M.	Fruit, raw or cooked	$\frac{2}{3}$ cup
	Any tender, ripe, mild fruit, with little or no sugar	
	Cereal, thoroughly cooked	$\frac{3}{4}$ cup
	Cereals containing most of or all the grain are preferable, as rolled oats, and wheat, cracked wheat, unpolished rice, etc.	
	Top milk, or thin cream, for cereal	$\frac{1}{4}$ cup
	Sugar for cereal	1 ts.
	Milk, or weak cocoa made with milk	$\frac{3}{4}$ cup
	Bread, preferably a day old or toasted, graham or whole wheat frequently	2 slices
	Butter	2 ts.
12—1 P. M.	Egg, cooked at low temperature without fat	1 egg
	or	or
	Meat, lean and tender, such as chicken, beef, lamb, oysters, codfish; small serving	1 oz.

	Potato, baked, steamed, or boiled, with a little fat, white sauce, or gravy	1-2 potato <i>or</i>
	Rice, hominy, macaroni, or baked banana	$\frac{1}{2}$ cup
	Green vegetable with simple seasoning	$\frac{1}{3}$ cup
	Bread, as above	2 slices
	Butter	2 ts.
	Dessert:	
	Junket or egg custard	$\frac{2}{3}$ cup <i>or</i>
	Simple pudding, as rice, bread, tapioca, cornstarch	<i>or</i>
	Simple ice creams, sherbets, or frozen custards	
5:30 P. M.	Milk, as cream of vegetable soup or with toast, bread, or cereal	1 cup
	Toast or bread	2 slices <i>or</i>
	Cereal, as rice, mush, etc.	$\frac{2}{3}$ cup
	Fruit, as above	$\frac{2}{3}$ cup
	Plain cookies, cake, ginger bread, or crackers	1-2 pieces
Mid-morning	Milk	1 cup <i>or</i>
Mid-afternoon	Toast, bread, or crackers	2-3 pieces

## DIET FOR A CHILD TWELVE YEARS OLD

Breakfast	Fruit, raw or cooked, with little sugar	$\frac{2}{3}$ cup
	Cereal, thoroughly cooked	$\frac{3}{4}$ cup
	Oatmeal, rolled oats and wheat, cracked wheat, unpolished rice, and others containing most of or all the grain are preferable.	
	Top milk or thin cream for cereal	$\frac{1}{3}$ cup
	Sugar for cereal	$\frac{1}{2}$ ts.
	Milk or cocoa made with milk	$\frac{3}{4}$ cup
	Bread, preferably a day old or toasted, graham or whole wheat frequently	2 slices
	Butter	1 tb.
Luncheon <i>or</i>	Soup, pea, lentil, cream of vegetable, or chowder	$\frac{4}{5}$ cup <i>or</i>
Supper	Meat substitute, egg, cheese, nut, or legume dish	$\frac{2}{3}$ cup
	Milk or cocoa	$\frac{3}{4}$ cup
	Bread, as above	2 slices
	Butter	1 tb.
	Fruit	$\frac{2}{3}$ cup
	Plain cookies, cake, ginger bread, or crackers	1-2 pieces

Dinner	Meat	1 serving
	or	or
	Eggs	1-2 eggs
	or	or
	Cheese dish: fondue, souffle, croquettes, cheese with macaroni, or rice, etc.	
	or	or
	Nut dish: loaf, croquettes, etc.	2/3 cup
	or	or
	Legume dish; baked beans or lentils; bean, pea, and lentil loaf or croquettes, etc.	
	Potatoes, rice, hominy, or macaroni	2/3 cup
	Green vegetable, cooked	1/2 cup
	Fresh fruit or vegetable salad, occasionally	1 serving
	Bread, as above	2 slices
	Milk	3/4 cup
	Dessert: any simple pudding, jelly, or frozen dessert	2/3 cup

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EDITED BY CHARLES H. WILLIAMS

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## FEEDING THE BABY

BY

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# FEEDING THE BABY

## I. MOTHER'S MILK FOR BABIES

Every baby has a right to the food nature has provided for him and it is the duty of every mother to do all in her power to make this food available. Mothers would perhaps be more anxious to do this and more serious in their attempts to nurse the baby if they realized the importance of this food to the child.

It is a well known fact that the death rate is very much higher among artificially fed than among breast fed children; various authorities give the advantage from one to four to one to ten on the side of the breast-fed children.

The child fed on artificial food is much more liable to colic and other digestive disturbances, and also is likely to contract any contagious diseases with which he comes in contact.

### ADVANTAGES OF MOTHER'S MILK

1. It is more easily digested (contains enzymes which help).
2. It is adapted in quantity and composition to the needs of the baby.
3. If the mother is well, the milk is sterile; that is, it contains no bacteria. (There is a great chance for contamination of cow's milk).
4. It renders the baby less likely to take diseases (contains immune bodies).
5. It is delivered at the proper temperature.
6. It is, aside from demanding the presence of the mother, easier and far less costly: no bottles, no nipples, no food to mix, no food to buy. Babies' food is quite expensive.

### HOW TO PROMOTE AN ADEQUATE FLOW OF MILK

Since the natural food is so important the first question which arises is: What can a mother do to help maintain this supply of food for her baby?

Regular hygienic living is the most important factor; regular hours for sleep, rest, exercise, and nursing the baby.

Abundant wholesome food with plenty of fruits, vegetables, cereals, and liquid. Milk contains much water and that must be supplied in the diet each day while there must still be sufficient for the other body functions. The diet should be varied. Anything which causes indigestion in either mother or child must be omitted. There seems to be some disagreement as to whether or not acid fruits and vegetables eaten by the mother cause colic in a nursing baby. In any



case a mother should introduce them into the diet gradually and judge for herself the effect on the child. Milk is a desirable food at this time.

Outdoor exercise is valuable but should not be continued to the point of tiring oneself. The mother should be relieved as far as possible from any mental or physical strain. A mother who is kept awake all night with a crying, fretful baby cannot expect an adequate flow of milk.

Regular stimulation of the breast is necessary in order to keep up the supply. In some cases when mixed feedings are used the breast fails to be stimulated sufficiently and the milk gradually disappears altogether. It is especially important that the breasts be completely emptied at each feeding. The lack of success in the use of the mechanical milker in cows has been in part attributed to the fact that it does not completely empty the milk reservoirs and consequently the cows go dry sooner than usual. In the case of a very young, weak baby it may be necessary to remove the last of the milk with a pump.

#### CONDITIONS UNDER WHICH A BABY SHOULD BE WEANED

In any acute infectious disease of the mother the child must be taken from the breast. In case the condition is only temporary the child can be returned after the infection passes off, provided the mother is not too weak and the secretion has been kept up by pumping the breasts.

Pregnancy is an indication for weaning. The return of menstruation is not. The milk flow is evidently affected at this time but with care all trouble can be avoided.

If the mother is weak physically she ought, if possible, to be relieved elsewhere and to build herself up by rest, proper food, and outdoor exercise so that it becomes possible for her to nurse the baby.

If there is not enough milk, one may use a combination of nursing with artificial feeding. The artificial food may be given as a part of each feeding or may be substituted entirely for one or more feedings during the day. One advantage of the first method is that the breast is stimulated with sufficient frequency. An additional advantage is due to the fact that the presence of the breast milk along with the artificial food makes it digest more readily. The breast should be given first in this case and care taken to insure that it be completely emptied at each feeding. If one or more artificial feedings are substituted during the day, the mother is given more freedom. By making temporary use of artificial feedings and at the same time doing all in her power to increase the flow of milk, a mother may be able to increase the supply of milk sufficiently to make any artificial food unnecessary.

### INDIGESTION IN THE NATURALLY FED CHILD

The milk may disagree with the child. This rarely happens if the child gets plenty of fresh air and is fed regularly at sufficiently long intervals, every three or four hours, the latter especially if there is any sign of indigestion. If, after such regulation, the indigestion persists, it can usually be traced to too much fat in the breast milk. In such cases at each nursing the baby is allowed to nurse only a short time. The remaining milk is pumped from the breast and allowed to stand on ice until the cream rises and can be removed. The skimmed breast milk is then fed in a bottle with each breast feeding. Such a condition is usually temporary and can very often be corrected by sufficient intervals between feeding and plenty of fresh air.

### WEANING

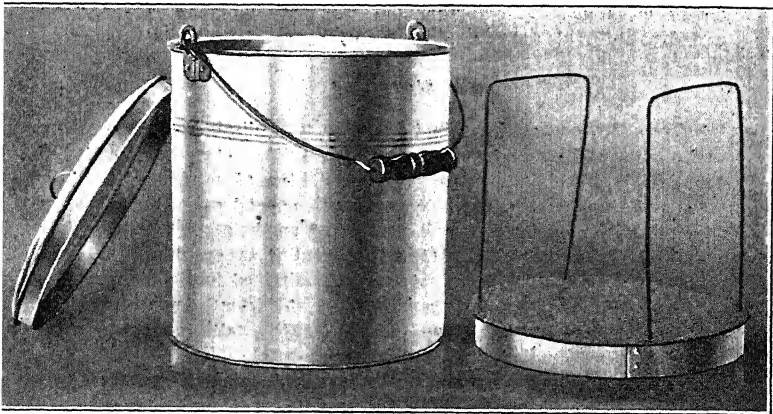
Toward the end of the first year the milk diminishes in quantity and quality and no longer meets the needs of the baby. Some artificial food, milk, cereal, and fruit juice, should be given from the ninth month on. The exact time of weaning will depend somewhat upon the season. If the baby can be well established on the artificial food before hot weather, so much the better, provided it is not less than nine months old; otherwise it is best to continue mixed feeding until cooler weather when the baby may be weaned at any time between the ninth month and one year. Beyond this time the milk has very little value for the baby and may even be detrimental.

If the baby has been given some artificial food, the weaning process is comparatively easy. The baby may refuse one or two feedings at this stage, but if, when the artificial food is refused, no more is offered until the next regular feeding time, the baby will soon be established on a regular schedule of artificial food. When milk is given for the first time at nine months, the baby will take it quite readily from a cup and the trouble of handling the bottles and nipples will be obviated. When given in this way, it is much more readily combined with the cereals so desirable at this stage.

## II. ARTIFICIAL FEEDING

### MATERIAL FOR ARTIFICIAL FEEDING

*Milk.* If the child must be artificially fed, cow's milk is the best substitute. In selecting cow's milk for a baby, one should obtain it from a tested herd. It seems unnecessary to state that the milk should be handled carefully. Since it is almost impossible to keep even a tested herd absolutely free from tuberculous cattle, some authorities



*Bottle holder and bucket for sterilizing milk*

advocate that all milk be sterilized before it is given to babies. Home sterilization is best, for if the milk is pasteurized or sterilized at the dairy, there is an opportunity for subsequent infection.

In general the mixed milk from a herd is better for a baby than the milk from one cow. Holstein milk agrees best with babies on account of its lower fat content.

*Dilution.* Cow's milk is diluted with plain water or with one of the cereal waters in being prepared for the baby. Barley is the cereal most used. It supplies a small amount of starch and is supposed to prevent the milk from forming too dense curds. In cases of constipation, oatmeal water is substituted for the barley water. In case there is a tendency to looseness of the bowels, rice water is used.

*Cereal gruels.* These gruels are made by boiling the starch in the proportion of one tablespoon to one pint of water for several hours, or cooking over night in the fireless cooker. If the whole cereal is used,

more is necessary. When the gruel is used, it should be diluted to the consistency of skim milk.

*Sugar.* Sugar must be added, too, in order that the baby's ration be properly balanced. Since the sugar normally present is milk sugar, it would seem wise to add it to the artificial food in this form, but experience has proved this not to be always the case. Cane sugar is utilized better than the milk sugar, but there is danger in using it of accustoming the child to too sweet a food. Probably the best sugar for the baby is dextro-maltose. As the child grows older, starch and cereals well cooked replace this addition of sugar.

### SELECTION AND CARE OF BOTTLES AND NIPPLES

*Bottles.* The baby's bottle should have no angles; it should have a flat bottom and a narrow neck but one long enough to allow the nipple to be put on easily. The Hygiea bottle is easily cleaned, but the large nipple demanded is more unsanitary than the usual type of nipple. It brings too much rubber in contact with the milk. The rubber cracks and tends to harbor germs in these cracks. Glass is much easier to sterilize than the rubber.

*Care of bottles.* All bottles should be rinsed out with cold water after using. They should then be washed thoroughly with soap suds and a bottle brush, rinsed again and boiled five to twenty minutes. The outside should be dried and a sterile cotton plug used to close the opening.

*Nipples.* Nipples should be of the best rubber so as to prevent cracking, and as small an amount of rubber as possible should be exposed to the milk. They should be scrubbed with a brush on both sides, boiled five minutes, and kept covered in a sterilized fruit jar until needed.

*Utensils for Mixing the Food.* In order properly to prepare the food, one must have the necessary utensils at hand. These should be as simple as possible and reserved for this use. The following utensils are needed: a pitcher sufficiently large to hold the food for the day, a large spoon for stirring, a measuring glass graduated in ounces, and a funnel to aid in filling the bottles. After the bottles have been filled, they should be plugged with absorbent cotton to prevent the entrance of bacteria, and sterilized. Convenient forms of sterilizers are on the market, but one can be very conveniently made from a bucket of a suitable size with a basket to hold the bottles improvised from wire fencing. (See illustration.) In this the water should be heated to the boiling temperature and held there for ten minutes.

### MODIFYING THE MILK

*Amount.* It is wise to make up at one time all the food necessary for the day. In order to do this, we must know how much is to be given at a feeding and how many feedings there are per day.

The amount at each feeding depends upon the capacity of the baby's stomach. Table 1 gives the capacity of the baby's stomach at different ages:

Capacity of the Stomach of a Baby at Different Ages

<i>Age</i>	<i>Capacity</i>	<i>Age</i>	<i>Capacity</i>
At birth	2 oz.	7 months	6½ oz.
1 month	2½ oz.	8 months	7 oz.
2 months	3½ oz.	9 months	7½ oz.
3 months	4½ oz.	10 months	8 oz.
4 months	5 oz.	11 months	8½ oz.
5 months	5½ oz.	12 months	9 oz.
6 months	6 oz.		

As a rule the child should be offered at each feeding one ounce more than the capacity of the stomach at that age. He should never be forced to take it all if it seems too much, and if, on the other hand, the indications are that the child is not receiving a sufficient amount of food, more can be given. It must be remembered that all children are not made along standard lines. The child must be fed according to weight; the age is only the guide to the amount needed at each feeding.

*Number of feedings.* As to the frequency of feedings, there should be at least a three and preferably a four hour interval between them. This is especially necessary for an artificially fed baby since a meal of cow's milk leaves the stomach only after three hours. Giving a larger quantity of food at less frequent intervals provides a period of rest for the stomach which is one of the best provisions against indigestion.

The very young baby should be fed every four hours throughout the twenty-four: at 2, 6, 10 A. M., 2, 6, 10 P. M.; or at 3, 7, 11 A. M., 3, 7, 11 P. M.; or on whatever is the most convenient schedule for the mother. After the baby is a month old, one night feeding is sufficient and can be given at midnight, though most babies will sleep from ten at night till six in the morning. This makes five feedings per day. After nine months the one night feeding can be discontinued and none given between six P. M. and six A. M., the baby at this age requiring only four feedings.

### COMPOSITION OF FOOD

*Building material.* The baby needs material to build muscle, bone, teeth, etc. The amount needed will depend upon the weight of the baby. For each pound weight the baby will need one and one-half ounces of milk; the weight of the baby is therefore multiplied by one and one-half to determine the amount of milk necessary in the food for the day. In general this is all that is necessary to supply the building material for the day.

*Energy.* The baby's food must also supply heat and energy. Milk gives energy as well as building material. If ordinary milk with 4 per cent. of fat is used, it will supply two-thirds of the energy needed. The remainder is made up with sugar or cereal; one-eighth ounce of sugar to each pound weight of baby will assure enough sugar to make up the energy requirement.

### MIXING

Dissolve the sugar in a small amount of water or in cereal water if it is to be used. Measure the milk, and add enough water or cereal water to make up the required number of ounces, having dissolved the sugar in part of the water. Mix well.

After being mixed, the milk should be put immediately into the number of bottles necessary for the day, plugged with cotton, and sterilized.

### STERILIZATION

The process of sterilizing is the same as that of sterilizing fruit in canning, only the time required is less because of the smaller size of the container. The bottles should be placed in a container surrounded with water and heated at the boiling point for ten minutes. They should then be cooled rapidly with running water and placed on ice until wanted.

### SERVING THE MILK

At the feeding time the milk should be heated to body temperature. This should be done by immersing the bottle in warm water until it reaches the required temperature. The mother should remember that the bottle is cold and may break if introduced too suddenly into water which is too hot. Experience will soon teach her the time necessary for the milk to reach the required temperature. The cotton plug should be removed at this stage and a clean sterilized nipple put on. The milk may be tested by dropping a small amount on the inner part of the mother's arm. It should feel just comfortably warm. If it is too warm, it should be cooled under running water. The part of the nipple which enters the baby's mouth should not be touched, since there is so much danger of contamination.

#### *Calculation of the amount of food necessary:*

This method of feeding can be followed in detail for babies between three and six months. For example, take a baby three months old, weighing twelve pounds. Such a baby will be getting five feedings of five and one-half ( $5\frac{1}{2}$ ) ounces; therefore, a total of twenty-seven and one-fourth ( $27\frac{1}{4}$ ) ounces of food will be required. Since the baby weighs twelve pounds, he will need one and one-half ( $1\frac{1}{2}$ ) times twelve (12) or eighteen (18) ounces of milk per day, and one-eighth

( $\frac{1}{8}$ ) times twelve (12) or one and one-half ( $1\frac{1}{2}$ ) ounces of sugar. Nine (9) ounces of water will be necessary to make up the volume of the food; therefore, the  $1\frac{1}{2}$  ounces of sugar are dissolved in the water, the milk is added, well mixed, and distributed among five bottles.

An older baby, for instance an eight months old baby, will probably weigh about eighteen (18) pounds. He will require eight ounces at a feeding or 40 ounces per day. Of this forty ounces  $1\frac{1}{2} \times 18$ , or 27 ounces, will be milk; therefore, 13 ounces of cereal water or plain water will be needed and  $2\frac{1}{4}$  ounces of sugar.

Where the baby is nursed, but additional, artificial food is needed, it is made up according to this same scheme, calculated on the basis of weight and the capacity of the baby's stomach. The easiest plan is to calculate the full amount for the day. Then if one or two feedings of artificial food are to be used, one-fifth or two-fifths or the whole may be made up and placed on ice until needed.

In the same way in cases where the baby nurses awhile at each feeding, one-half, one-third, or one-fourth of the food for the day, the proportion which the baby seems to need to gain properly, may be made up, divided up into the proper number of bottles, and kept cool until needed. The baby should not be fed too much.

At the ninth month it will be possible to omit the night feeding. This will simply mean that when the food is mixed for the day, less water, but the same amount of milk, will be used, so that the volume will be less but the food value the same. Cereal had better be substituted wholly or in part for the sugar at this age.

*Fruit juice.* Fruit juice can be given as early as the third month. It is especially valuable in correcting constipation and as a source of iron. Milk is poor in iron and many babies need this important mineral element. Especially when a baby is fed sterilized milk, is fruit juice desirable. The best fruits to use are oranges and prunes. Prune juice can be taken when orange juice cannot. The amount should be small at first (one teaspoonful); gradually it can be increased up to two to four ounces per day.

### FEEDING AFTER THE NINTH MONTH

After the ninth month, less milk per pound will be needed. *A baby should never get more than one quart of milk per day.* The sugar may be omitted entirely and cereals substituted. The ground whole cereals are best, but should be strained before being given to the baby. At first they can be added to the milk but later may be fed in the more solid form with the milk. The strained juice and pulp from carrots and spinach are good at this stage.

The baby should have each day some food upon which to exercise his teeth. Graham crackers, arrowroot crackers, zwiebach, and toast are good for this. They can be munched after the bottle. Imperfect

development of teeth is frequently the result of lack of exercise. There is danger in giving children too much "soft food."

Some authorities recommend the use of beef juice and scraped beef. The objection to this is that the child will come to like the more highly flavored foods and tend to eat them to the exclusion of the less highly flavored that are better for him. Especially does there seem little advantage in the use of beef juice. Broths have practically no food value and have no place in the dietaries of young children.

Eggs should be used sparingly before the baby is eighteen months old. A whole egg is rather a large amount to commence with and may lead to a digestive upset.

After the baby commences eating solid food, one should not make the mistake of thinking that any food is possible. The meals must be as carefully supervised and as regular as at any time. It is well at this time to train even the bottle baby to take its food from a cup. By starting early in the training in proper food habits, the mother will save much trouble later on.





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EXTENSION SERIES 29

EDITED BY CHARLES H. WILLIAMS

## A MANUAL FOR THE MENTAL AND PHYSICAL EXAMINATION OF SCHOOL CHILDREN (Revised)

BY

WILLIAM HENRY PYLE



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## FOREWORD

In this new edition of the Manual I have included the results obtained from measuring and testing many thousands more of children. The additional data give the age and sex norms greater reliability. In the tests of city children I have included one additional test, the analogues.

Mr. P. E. Collings, working under my direction, gave the mental tests to all the children above the third grade in the rural schools of one Missouri county. He also took the physical measures of the country children. The results of Mr. Collings' work are included in this manual.

In securing the additional data for city children, I wish to acknowledge the assistance of Miss Hazel Sumerfield, who gave the tests and made the physical measures in the City of Joplin, Missouri.

W. H. P.

# A MANUAL FOR THE MENTAL AND PHYSICAL EXAMINATION OF SCHOOL CHILDREN

(Revised)

## OBJECT OF MENTAL TESTS

The object of mental tests is to assist the teacher in obtaining a knowledge of the individual child. Just as a dairyman, to be successful, must know his cows—the best breeds, the best feed, and the best kind of treatment—so a teacher must know her pupils. It is true that she learns about them from their regular work in their classes, but there are various factors besides ability that determine whether a child does well or poorly in school studies. Progress in school studies is not, therefore, an accurate indication of ability. The teacher needs an independent measure of ability. The tests constitute such a measure. A child often does poorly in a particular study because he was started wrong or at the wrong time or is poorly taught. The child may have come to believe, in such a case, that he has no ability in such a study, or perhaps in any study. The tests, being something new, arouse great interest; the child has no preconceived notion about his ability to perform them and is therefore very likely to do his best. A series of mental tests given at the beginning of the school year will give as good an idea of the pupils' ability as can be obtained ordinarily in a year in the ordinary school work. Moreover, the tests show in what aspects of the child's mind he is good and in what aspects, poor. However, too much reliance should not be placed on such differences unless several tests of the same kind are given. If each type of test were repeated about six times and the results of all the tests pooled, they would give an accurate indication of the abilities which the various tests measure. Inasmuch as these abilities are those demanded in school work, the tests give an indication of the child's ability to do the school work. One could not know from the tests whether the child would *do* the school work or not. Doing the school work depends on ability and *effort*. The tests measure only *ability*. They enable us to prophesy success only to the extent that success depends on ability. This is one thing the teacher very much needs to know, the child's ability. The tests, carefully given, will aid very much in determining this ability. Each child is, to some extent, a special problem. We must, therefore, use every means at our command to learn all possible about each child. It requires but an hour and a half to give the mental tests, and only a few days to grade the papers. The information obtained abundantly justifies the time and energy expended.

### USE TO BE MADE OF THE RESULTS

The results of the tests will help the teacher in the classification and gradation of the pupils. This help is not much needed except in the doubtful cases. One often needs to know whether a pupil has failed because of lack of effort or lack of ability. The tests will help to answer this question. If a child fails because of lack of ability, he should probably not be promoted. If he fails because of lack of effort, he should probably be promoted and an attempt made to get him to do the work of which he is capable. The progress of children through the grades should be in accordance with *their ability and with the rapidity of their development*. Some children develop much faster than others and can therefore acquire the skill and knowledge of the school subjects much faster than others. The tests will aid in determining the development of the children and should lead to greater economy of time and effort in dealing with them.

An accurate knowledge of the child's ability and development will not only be a help in gradation and classification but should also help in the actual teaching. Every bit of information that a teacher can get about a child should be a help in dealing with that child. Studies made by the author indicate that there is a wide difference of ability possessed by the children ordinarily found in the same grade. It will usually be found that there are children in the third grade with as great ability as that of some pupils in the high school. A more careful system of gradation will lead to more nearly equal ability in the same grade and should make better teaching possible.

If mental tests were given in a school every year, the development of the child could be traced and the rapidity of this development determined. This information would be a great help in dealing with the individual child. It must be remembered that the mental tests are measures of the abilities possessed by individual children and are not measures of the efficiency of the teacher, except to the extent that the teaching may have affected the development of the child.

### PHYSICAL MEASURES AND TESTS

It has been found that there is a close relation between mental and physical development. Therefore, it is important to know of the physical development of every child. If all the children of the same age in the schools are studied, it is found that the heavier ones, the taller ones, the stronger ones, etc., are in the upper grades. Therefore, the physical development of the child should be studied, and the records of this development from year to year kept. Norms of the more important physical measures and tests are given in this manual.

The relation of physical to mental development is shown in the fol-

lowing table, which gives the height and muscular speed of the 12-year-old school children in McDonald County, Missouri. It will be seen that the 12-year-old boys in the higher grades have a better physical development than the boys of the same age in the lower grades.

#### AVERAGE HEIGHT AND AVERAGE MUSCULAR SPEED, BY GRADES.

Grade	Cases	Av. ht., cm.	Av. musc.sp.
I	4	134	143
II	4	139	151
III	14	145	154
IV	17	146	161
V	39	147	163
VI	13	146	165
VII	18	148	166
VIII	3	149	167

#### GENERAL DIRECTIONS

The results of the mental tests in the school will be worse than useless unless the tests are given with the greatest care and scientific precision. Every test should be most carefully explained to the children so that they will know *exactly* what they are to do. The matter must be so presented to them that they will put forth *all possible* effort. They must take the tests seriously. Great care must be taken to see that there is no cheating. The work of each child should be his own work. In those tests in which time is an important element, the time must be *carefully kept*, with a stop watch if one is available. The papers should be distributed for the tests and turned face downward on the pupil's desk. The pupil, when all is ready to begin, should take the paper in his hand and at the signal "begin" turn it over and begin work, and when the signal "stop" is given, should quit work instantly and turn the paper over. Before the work begins, the necessary information should be placed on each paper. This information should be the pupil's name, age, grade, sex, and school. This should be on every paper. When the test is over the papers should be immediately collected.

#### DETERMINATION OF MENTAL AGE

A child's mental age can be determined by combining the results of several tests. For this purpose it will be most convenient to use tables XXXVII and XXXVIII. Find the mental age reached by the child in each test, add these together and divide by the number of tests. It

must be remembered that in all the tables the age indicated is the age at last birthday. The norms in all cases indicate the averages of all children who have passed the birthday indicated by the age who have not yet reach the next birthday. The norm for age ten, for example, represents the standing made by children whose average age is about ten-and-a-half.

### LOGICAL MEMORY

**OBJECT.**—The purpose of this test is to determine the pupil's facility in remembering and reproducing ideas. A pupil's standing in the test may serve as an indication of his ability to remember the subject matter of the school studies.

**METHOD.**—The procedure in this test is for the teacher to read slowly and distinctly the story to be reproduced. Immediately after the reading the pupils are to write down all of the story that they can recall. They must not begin to write till *after* the reading. Ten minutes should be allowed for the reproduction. This is ample time, and each pupil should be told to use the whole time in working on his reproduction. At the end of ten minutes, collect the papers. Care should be taken to see that each pupil does his own work, that there is no copying. Before reading the story, the teacher should give the following instructions:

I shall read to you a story entitled *Willie Jones and His Dog* (or *A Farmer's Son*, or *A Costly Temper*, as the case may be). After I have read the story you are to write down all you can remember of it. You are not to use the exact words that I read unless you wish. You are to use your own words. Try to recall as much as possible and write all you recall. Try to get all the details, not merely the main facts.

**MATERIAL.**—For grades three, four, and five, use *Willie Jones and His Dog*; for grades six, seven, and eight, use *A Farmer's Son*; for the high school, use *A Costly Temper*. The norms for the latter are based on eighth grade and high school pupils.

### WILLIE JONES AND HIS DOG

Willie | Jones | was a little | boy | only | five years old. | He had a  
dog | whose name was Buster. | Buster was a large | dog | with long, |  
black, | curly | hair. | His fore | feet | and the tip | of his tail | were  
white. | One day | Willie's mother | sent him | to the store | which  
was only | a short | distance away. | Buster went with him, | fol-  
lowing behind. | As Buster was turning | at the corner, | a car |  
struck him | and broke | one | hind | leg | and hurt | one | eye. | Willie  
was | very | sorry | and cried | a long | time. | Willie's father | came |  
and carried | the poor | dog | home. | The broken leg | got well | in  
five | weeks | but the eye | that was hurt | became blind. |

## A FARMER'S SON

Will | was a farmer's | son | who attended school | in town. | His  
clothes | were poor and his boots | often smelled | of the farmyard |  
although he took great | care of them. | Since Will had not gone to  
school | as much | as his classmates, | he was often | at a disadvantage, |  
although his mind | was as good | as theirs,— | in fact, he was brighter |  
than most | of them. | James, | the wit | of the class, | never lost an  
opportunity | to ridicule | Will's mistakes, | his bright | red | hair, and  
his patched | clothes. | Will | took the ridicule | in good part | and never |  
lost his temper. | One Saturday | as Will | was driving | his cows | to  
pasture, | he met James | teasing | a young | child, | a cripple. | Will's |  
indignation | was aroused | by the sight. | He asked | the bully | to  
stop, | but when he would not, | Will pounced | upon him | and gave  
him | a good | beating, | and he would not | let James go | until he prom-  
ised | not to tease | the crippled | child | again. |

## A COSTLY TEMPER

A man | named John | Murdock | had a servant | who worried him |  
much by his stupidity. | One day | when this servant was more | stu-  
pid | than usual, | the angry | master | of the house | threw a book | at  
his head. | The servant | ducked | and the book flew | out of the window. |

"Now go | and pick that book up!" | ordered the master. | The  
servant | started | to obey, | but a passerby | had saved him | the trou-  
ble, | and had walked off | with the book. | The scientist | thereupon |  
began to wonder | what book | he had thrown away, | and to his hor-  
ror, | discovered | that it was a quaint | and rare | little | volume | of  
poems, | which he had purchased | in London | for fifty | dollars. |

But his troubles | were not over. | The weeks went by | and the  
man had almost | forgot his loss, | when strolling | into a second hand |  
bookshop, | he saw, | to his great delight, | a copy of the book | he had  
lost. | He asked the price. |

"Well," | said the dealer, | reflectively, | "I guess we can let you  
have it | for forty | dollars. | It is a very | rare book, | and I am sure |  
that I could get seventy-five | dollars for it | by holding on a while." |

The man of science | pulled out his purse | and produced the  
money, | delighted at the opportunity of replacing | his lost | treasure. |  
When he reached home, | a card | dropped out | of the leaves. | The card  
was his own, | and further | examination | showed that he had bought  
back | his own property. |

"Forty dollars | worth of temper," | exclaimed the man. | "I think  
I shall mend my ways." | His disposition | afterward | became so |  
good | that | the servant became worried, | thinking the man | must be  
ill. |



The norms for country children are based upon the *Marble Statue*, which was given in all the grades. The norms for city children based upon this test are not given in this manual, but can be found in the author's *Examination of School Children*.

### THE MARBLE STATUE

A young | man | worked | years | to carve | a white | marble | statue |  
of a beautiful | girl. | She grew prettier | day by day. | He began to  
love the statue | so well that | one day | he said to it: "I would give |  
everything | in the world | if you would be alive | and be my wife." |  
Just then | the clock struck | twelve, | and the cold | stone began to grow  
warm, | the cheeks red, | the hair brown, | the lips to move. | She  
stepped down, | and he had his wish. | They lived happily | together |  
for years, | and three | beautiful | children were born. | One day | he was  
very tired, | and grew | so angry, | without cause, | that he struck her. |  
She wept, | kissed | each child | and her husband, | stepped back | upon  
the pedestal, | and slowly | grew cold, | pale | and stiff, | closed her eyes, |  
and when the clock | struck | midnight, | she was a statue | of pure |  
white | marble | as she had been | years before, | and could not hear |  
the sobs | of her husband | and children. |

**THE RESULTS.**—The material for the test is divided into units as indicated by the vertical lines. The pupil's written reproduction should be compared unit by unit with the story as printed, and given one credit for each unit adequately reproduced. The norms for the tests are shown in the tables which follow. In general, it will be noticed, there is an improvement of memory with age, but in the high school, in the *Costly Temper* test, there is a decline. This may not indicate a real decline in ability to remember ideas, but a change in attitude. The high school pupil probably acquires a habit of remembering only significant facts. His memory is selective, while in the earlier ages, the memory may be more parrot-like, one idea being reproduced with about as much fidelity as another. This statement is made not as a *fact*, but as a *probable* explanation.

### ROTE MEMORY

**OBJECT.**—The object of the rote memory tests is to determine the pupil's memory span for unrelated impressions,—words that have no logical relations with one another. Much school work makes demands upon this ability. Therefore, the tests are of importance.

**METHOD.**—There are two lists of words, *concrete* and *abstract*, with six groups in each list. The list of concrete words should be given first, then the abstract. The procedure is to pronounce the first group, *cat, tree, coat*, and then pause for the pupils to write these three words.

Then pronounce the next group, *mule, bird, cart, glass*, and pause for the reproduction, and so on through the list.

Give the following instructions:

We wish to see how well you can remember words. I shall pronounce first a group of three words. *After* I have pronounced them, you are to write them down. I shall then pronounce a group of four words, then one of five words, and so continue with a longer group each time. You must pay very close attention for I shall pronounce a group but once. You are not required to write the words in their order, but just as you recall them.

**MATERIAL.**—The words for the test are given in the following lists:

<i>Concrete</i>	<i>Abstract</i>
1. Cat, tree, coat	1. good, black, fast
2. mule, bird, cart, glass	2. clean, tall, round, hot
3. star, horse, dress, fence, man	3. long, wet, fierce, white, cold
4. fish, sun, head, door, shoe, block	4. deep, soft, quick, dark, great,
5. train, mill, box, desk, oil, pup,	dead
bill	5. sad, strong, hard, bright, fine,
6. floor, car, pipe, bridge, hand,	glad, plain
dirt, cow, crank	6. sharp, late, sour, wide, rough,
	thick, red, tight

**RESULTS.**—The papers are graded by determining the number of concrete words and the number of abstract words that are reproduced. No account is taken of whether the words are in the right position or not. A perfect score in each test would therefore be thirty-three. The norms are shown in the tables.

## THE SUBSTITUTION TEST

**OBJECT.**—This test determines one's ability to build up new associations. It is a test of quickness of learning.

**METHOD.**—The substitution test-sheets are distributed to the pupils and turned face down on the desks. The teacher gives the following instructions:

We wish to see how fast you can learn. At the top of the sheet which has been distributed to you there is a key. In nine circles are written the nine digits and for each digit there is written a letter which is to be used instead of the digit. Below the key are two columns of numbers; each number contains five digits. In the five squares which follow the number you are to write the letters which correspond to the digits. Work as fast as you can and fill as many of the squares as you can without making mistakes. When I say "stop," quit work instantly and turn the paper over.

Before beginning the test the teacher should explain on the black-board the exact nature of the test. This can be done by using other let-

ters instead of those used in the key. Make sure that the pupils understand what they are to do. Allow *eight* minutes in grades three, four, and five, and *five* minutes above the fifth grade.

MATERIAL.—For material use the substitution test-sheets.

RESULTS.—In grading the work, count each square correctly filled in as one point, and reduce the score to speed per minute by dividing by eight in grades three, four, and five, and by five in the grades above.

### FREE ASSOCIATION

OBJECT.—This test determines the speed of the free flow of ideas. The result of the test is a criterion of the quickness of the flow of ideas when no restriction or limitation is put on this flow.

METHOD.—The procedure in this test is to give the pupils a word, and tell them to write this word down and all the other words that come into their minds. Make it clear to them that they are to write whatever word comes to mind, whether it has any relation to the word that is given them or not. Start them with the word *cloud*. Give the following instructions:

I wish to see how many words you can think of and write down in three minutes. I shall name a word, you may write it down and then all the other words that come into your mind. Do not write sentences, merely the words that come into your mind. Work as fast as you can.

RESULTS.—Score the work by counting the number of words that have been written.

### OPPOSITES

OBJECT.—This is a test of controlled association. It tests one aspect of the association of ideas. All thinking is a matter of association of ideas. Reasoning is controlled association. The test may therefore be taken as a measure of speed in reasoning.

METHOD.—Distribute the opposites lists to the pupils and turn them face down on the desks. Use list *one* in grades three, four, and five, and list *two* in grades above. Allow two minutes in grades three, four, and five and one minute in grades above. Give the following instructions:

On the sheets that have been distributed to you are fifty words. After each word you are to write a word that has the opposite meaning. For example, if one word were *far*, you could write *near*. Work as fast as you can, and when I say "stop," quit work instantly and turn your paper over.

RESULTS.—The score is the number of opposites correctly written.

### OPPOSITES—List No. I.

1. good	14. sharp	27. dark	40. first
2. big	15. fast	28. dead	41. over
3. rich	16. black	29. wide	42. love
4. out	17. old	30. empty	43. come
5. sick	18. up	31. above	44. east
6. hot	19. thick	32. north	45. top
7. long	20. quick	33. laugh	46. wise
8. wet	21. pretty	34. man	47. front
9. yes	22. heavy	35. before	48. girl
10. high	23. late	36. winter	49. sad
11. hard	24. wrong	37. ripe	50. fat
12. sweet	25. smooth	38. night	
13. clean	26. strong	39. open	

### OPPOSITES—List No. II.

1. strong	14. high	27. long	40. wide
2. deep	15. foolish	28. wet	41. drunk
3. lazy	16. present	29. fierce	42. tight
4. seldom	17. glad	30. great	43. empty
5. thin	18. strange	31. dead	44. sick
6. soft	19. wrong	32. cloudy	45. friend
7. many	20. quickly	33. hard	46. above
8. valuable	21. black	34. bright	47. loud
9. gloomy	22. good	35. fine	48. war
10. rude	23. fast	36. plain	49. in
11. dark	24. clean	37. sharp	50. yes
12. rough	25. tall	38. late	
13. pretty	26. hot	39. sour	

### THE WORD BUILDING TEST

OBJECT.—This is a test of a certain type of inventiveness, namely linguistic invention. Specifically it tests the pupil's ability to construct words using certain prescribed letters.

METHODS.—The pupils are given the letters, a, e, o, m, n, r, and told to make as many words as possible using only these letters. Give the following instructions:

I wish to see how many words you can make in five minutes, using only the letters which I give you. The words must be real English words. You must use only the letters which I give you and must not use the same letter more than once in the same word. You do not, of course, have to use all the letters in the same word. A word may contain one or more letters up to six.

MATERIAL.—The pupils need only sheets of blank paper.

RESULTS.—The score is the number of words that do not violate the rules of the test as given in the instructions.

### THE COMPLETION TEST

OBJECT.—This test, to some extent, is a test of reasoning capacity. Of course, it is only one particular aspect of reasoning. The pupil is given a story that has certain words omitted. He must read the story, see what it is trying to say and determine what words, put into the blanks, will make the correct sense. The meaning of the word written in a particular blank must not only make the sentence read sensibly but must fit into the story as a whole. Filling in the blanks in this way demands considerable thought.

METHOD.—Distribute the test-sheets and turn them face down on the desks. Allow ten minutes in all the tests. Give the following instructions:

On the sheets which have been distributed is printed a story, which has certain words omitted. You are to put in the blanks the words that are omitted. The words, which you write in, must give the proper meaning so that the story reads correctly. The word, which you fill in, must not only give the proper meaning to the sentence but to the story as a whole.

MATERIAL.—Use the completion test-sheets, *Joe and the Fourth of July*, for grades three, four and five; *The Trout* for grades six, seven and eight; and *Dr. Goldsmith's Medicine* for the high school.

RESULTS.—In scoring the papers, allow one credit for each blank correctly filled. It will be noticed that the boys excel in the Trout story. This is doubtless because the story is better suited to them on the ground of their experience and interest.

### JOE AND THE FOURTH OF JULY

Joe ran errands for his mother and took care of the baby until by the Fourth of July his penny grew to be a dime. The day before the Fourth, he went down town all by himself to get his fire works. There were so many kinds he hardly knew which to buy. The clerk knew that it takes a long time to decide, for he had been a boy himself not very long ago. So he helped Joe to select the very best kinds. "When are you going to fire them off?" asked the clerk. "I will fire them very early tomorrow," said the boy. So that night Joe set the alarm clock, and the next morning got up early to fire his firecrackers.

### THE TROUT

The trout is a fine fish. Once a big trout lived in a pool close by a spring. He used to stay under the bank with only his head show-

ing. His wide-open *eyes* shone like jewels. I tried to *catch* him. I would *creep* up to the *edge* of the pool *where* I could see his *bright* eyes looking up.

I *caught* a grasshopper and *threw* it over to him. Then there was a *splash* in the water and the grasshopper *was gone*. I *did* this *two* or three times. Each time I *saw* the rush and *spl ash* and saw the bait had been *taken*.

So I put the *sa me* bait on my *hook* and *threw* it over into the *water*. But *all* was silent. The fish was an *old* one and had *grown* very wise. I *did* this *day* after day with the same luck. The trout *knew* there was a *hook* hidden in the bait.

### DOCTOR GOLDSMITH'S MEDICINE

This *is* a story *of* good medicine. Most medicine is *bad* to take, but this was so good *that* the sick man *wished* for more.

*One* day a poor woman *went* to Doctor Goldsmith and *asked* him to *go* to see her *sick* husband. "He *is* very sick," she said, "and I *can* not *get* him to eat anything."

*So* Doctor Goldsmith *went* to *see* him. The doctor *saw* at once that the *reason* why the man *could* not eat was *because* he was so poor that he had *not* been able to buy good food.

Then he *said* to the woman, "Come to my *house* this evening and I will *give* you some *medicine* for your *husband*."

The women *went* in the evening and the *doctor* gave her a small paper box tied *up* tight. "It is very heavy," she said. "May I *see* what it looks *like*?" "No," said the doctor, "wait until you *get* home." When she *got* home, and she and her husband *opened* the box so that he *could* take the first *dose* of medicine,—what do you think they *saw*? The box was *filled* with silver *money*. This was the good doctor's medicine.

### ANALOGUES

OBJECT.—This is a test of one's ability to see logical relationships. It measures ability similar to that measured by the Opposites test, also similar to that measured by the Completion test.

METHOD.—Distribute the test sheets and turn them face down on the desks. Read the samples at the top of the test sheet and let the pupils orally supply the fourth term. The replies will give the examiner an idea as to how well the test is understood. When you are sure that all understand, say:

When I give the signal you may turn over the test sheet. You will find twenty-five analogies, each with the fourth term omitted. In the blank space you are to supply the fourth term, which must have the same relation to the third term that the second term does to the first.

Give one minute and forty-five seconds in all grades.

## ANALOGUES

Cold	is to Hot	as Black	is to White
Stairs	is to Step	as Ladder	is to Rung
Conductor	is to Train	as Captain	is to Boat
Hand	is to Finger	as Foot	is to Toe
Baby	is to Man	as Lamb	is to Sheep
1. Ring	is to Finger	as Bracelet	is to .....
2. Bird	is to Wing	as Fish	is to .....
3. Coal	is to Stove	as Oil	is to .....
4. Arm	is to Elbow	as Leg	is to .....
5. Fish	is to Scales	as Bird	is to .....
6. Time	is to Clock	as Temperature	is to .....
7. Water	is to Gallon	as Wheat	is to .....
8. Table	is to Wood	as Coat	is to .....
9. Purse	is to Money	as Bucket	is to .....
10. Water	is to Boat	as Air	is to .....
11. Storm	is to Calm	as War	is to .....
12. Shoe	is to Foot	as Glove	is to .....
13. Man	is to Home	as Bird	is to .....
14. Dog	is to Bark	as Cat	is to .....
15. Day	is to Sun	as Night	is to .....
16. Horse	is to Buggy	as Engine	is to .....
17. Apple	is to Tree	as Tomato	is to .....
18. Chicken	is to Coop	as Horse	is to .....
19. Kitten	is to Cat	as Gosling	is to .....
20. Pie	is to Pan	as Coffee	is to .....
21. Sweet	is to Sugar	as Sour	is to .....
22. Coal	is to Black	as Chalk	is to .....
23. Silk	is to Silkworm	as Wool	is to .....
24. Sheep	is to Flock	as Cow	is to .....
25. Uncle	is to Nephew	as Aunt	is to .....

## THE PHYSICAL TESTS AND MEASURES

**OBJECT.**—The object of the physical tests is to determine the physical development of the pupils.

**METHOD AND MATERIAL.**—For accurately measuring height a stadiometer is needed. Great care should be exercised in making the measurements. If the pupils are measured standing with their shoes on, the height of the heel should be deducted. The heel of the shoe can be accurately measured by means of callipers.

For weight, accurate platform scales are needed. For testing strength use the Smedley dynamometer, and give three trials with each hand, recording the best result for each. For testing muscular speed, use tapping

apparatus and electric counter, making a thirty seconds test with the right hand and then a thirty seconds test with the left hand. Before beginning the test, demonstrate to the pupil how it is to be done and allow him to try a second or two to see that he holds the stylus properly. The stylus should be held vertically and the pupil should strike the plate lightly.

The lung capacity test is made by means of a wet spirometer. The pupil is urged to fill the lungs as full as possible and then expel all the air into the spirometer. Give three trials and record the best result. The vital index is determined by dividing the lung capacity by the weight. Owing to the importance to the body of the aeration of the blood, the vital index is an important measure. Moreover, since the index is the ratio of the lung capacity to the weight, it has a value that the other physical measures do not have. When we have measured a child's weight or height, we can make no inferences unless we know whether the child belongs to a long stock or a short stock, a heavy stock or a light stock. But, when we have determined the amount of air-space in the lungs per pound of weight of the child, we have a measure that is of direct and special significance. The norms are shown in the tables. A more complete description of these tests and other tables of norms may be found in the author's *Examination of School Children*, or in Whipple's *Manual of Mental and Physical Tests*.

## MATERIAL AND APPARATUS

Test sheets for the mental tests can be obtained from the Extension Division of the University of Missouri. Apparatus for the physical tests can be obtained from C. H. Stoelting Company, Chicago.

## TABLES

Tables I to XII contain the age and sex norms for the physical measures for both city and country children. In XIII and XIV city and country children are compared in physical development. In tables XV to XXXVI are found the norms for the mental tests. Tables XXXVII and XXXVIII are comparative tables for mental measures. Table XXXIX gives the mental norms for city children by grades.

## INTERPRETATION OF THE RESULTS

The children measured are in all cases selected groups: namely, children in the public schools. For the physical measures, at least up to age fourteen, the norms are doubtless fairly representative of the general population. At age fourteen the children begin to drop out of school.



The figures seem to indicate that those who drop out have somewhat better physical development, on the average, than those that remain, for in many cases in the later years the averages are lowered.

The mental measures are still further complicated by the fact that in the Logical Memory, Opposites, and Completion tests, different tests are used for different grades. In such cases, the norms for the earlier ages are too high and those for the later ages are too low, for in any grade the youngest children are bright for their age and the oldest ones are dull for their age. However, if these facts are borne in mind, there need be no confusion in interpreting the results. It is probable that if there were no complicating factors the norm for any age would in no case be lower than that of the preceding age.

It will be noticed that in the physical measures there is little difference between city and country children, but a great difference in the mental measures, city children being much better. This difference decreases in the later ages. A comparison of the mental development of the sexes shows that in nearly all tests and at nearly all ages the girls are better than the boys. The rate of mental growth especially from age nine to twelve is greater for girls than it is for boys, just as their physical growth during these years is greater than that of boys. In order to have in the same grade children of the same ability, it would be necessary to have boys averaging several months older than the girls.

TABLE I—STANDING HEIGHT, CITY CHILDREN

Age	Boys			Girls		
	Number cases	Average Cm	Average Inches	Number cases	Average Cm	Average Inches
6	260	115.3	45.4	235	115.8	45.6
7	287	120.0	47.2	287	119.9	47.2
8	348	127.0	50.0	314	124.5	49.0
9	281	133.4	52.5	321	132.3	52.1
10	317	136.1	53.6	304	135.6	53.4
11	349	140.2	55.2	291	141.2	55.6
12	295	146.8	57.8	294	148.3	58.4
13	304	150.1	59.1	326	152.4	60.0
14	231	155.4	61.2	263	156.5	61.6
15	181	163.1	64.2	233	158.0	62.2
16	125	166.6	65.6	197	161.3	63.5
17	70	171.2	67.4	119	160.3	63.1
18	50	172.0	67.7	71	160.3	63.1

TABLE II—STANDING HEIGHT, COUNTRY CHILDREN

Age	Boys			Girls		
	Number cases	Average Cm	Average Inches	Number cases	Average Cm	Average Inches
8	128	126.3	49.8	147	125.5	49.4
9	108	130.3	51.3	115	126.1	49.7
10	121	134.5	53.0	130	137.0	54.0
11	105	139.5	55.0	106	139.7	55.0
12	114	144.2	56.8	117	147.5	58.1
13	74	148.7	58.6	116	152.3	60.0
14	88	155.4	61.2	93	156.3	61.6
15	51	163.5	64.4	79	159.9	63.0
16	66	163.3	64.3	53	163.3	64.3
17	44	163.2	64.3	62	160.4	63.2
18	36	176.1	69.4	81	163.1	64.3

TABLE III—SITTING HEIGHT, CITY CHILDREN

Age	Boys			Girls		
	Number cases	Average Cm	Average Inches	Number cases	Average Cm	Average <sup>c</sup> Inches
6	260	62.0	24.4	235	62.5	24.6
7	288	63.5	25.0	286	63.8	25.1
8	348	67.1	26.4	314	65.5	25.8
9	280	69.6	27.4	321	68.1	26.8
10	317	70.6	27.8	304	69.9	27.5
11	347	72.6	28.6	291	72.9	28.7
12	295	75.4	29.7	294	76.7	30.2
13	304	76.5	30.1	327	79.0	31.1
14	226	79.8	31.4	256	81.0	31.9
15	165	83.8	33.0	216	82.6	32.5
16	117	86.4	34.0	185	84.1	33.1
17	69	89.2	35.1	111	84.1	33.1
18	41	88.6	34.9	68	83.8	33.0

TABLE IV—SITTING HEIGHT, COUNTRY CHILDREN

Age	Boys			Girls		
	Number cases	Average Cm	Average Inches	Number cases	Average Cm	Average Inches
8	127	67.8	26.7	147	66.3	26.1
9	108	68.5	27.0	115	66.4	26.2
10	121	70.4	27.7	130	70.4	27.7
11	105	71.6	28.2	106	71.7	28.2
12	114	73.3	28.9	117	75.1	29.6
13	74	75.6	29.8	116	77.4	30.5
14	88	78.3	30.9	93	80.5	31.7
15	51	81.9	32.3	79	81.5	32.1
16	66	82.1	32.3	53	82.2	32.4
17	44	87.4	34.4	62	83.5	32.9
18	36	89.7	35.3	81	83.9	33.1

TABLE V—WEIGHT, CITY CHILDREN

Age	Boys			Girls		
	Number cases	Average Kg	Average Lbs	Number cases	Average Kg	Average Lbs
6	261	20.9	46.0	240	20.2	44.4
7	288	23.0	50.6	285	22.4	49.4
8	349	25.8	56.8	314	25.4	55.9
9	290	27.9	61.4	320	27.7	61.0
10	331	31.4	69.2	315	30.5	67.1
11	361	34.7	76.4	313	34.2	75.3
12	313	37.6	82.9	317	39.5	86.9
13	320	41.7	91.8	330	44.4	97.7
14	254	47.7	104.3	281	48.7	107.2
15	210	54.4	119.9	246	50.9	112.1
16	138	57.7	127.3	210	53.1	117.0
17	79	62.5	137.7	114	56.0	123.4
18	52	64.2	141.3	81	55.3	121.7

TABLE VI—WEIGHT, COUNTRY CHILDREN

Age	Boys			Girls		
	Number cases	Average lbs.	Average Kg.	Number cases	Average lbs.	Average Kg.
8	127	57.6	26.2	147	52.9	24.0
9	108	61.0	27.7	115	58.5	26.6
10	121	67.3	30.6	139	65.9	29.9
11	105	72.0	32.7	106	73.6	33.4
12	114	79.2	36.0	117	86.1	39.1
13	74	85.1	38.6	116	94.1	42.7
14	88	99.0	44.9	93	103.8	47.1
15	51	113.6	51.6	79	117.3	53.3
16	66	128.0	58.1	53	118.6	53.8
17	44	130.6	59.3	62	115.0	52.2
18	36	144.0	65.4	81	120.4	54.7

TABLE VII—LUNG CAPACITY AND VITAL INDEX, CITY CHILDREN

Boys					
Age	Number cases	Cc.	Cu. Inches	Cc per Kg.	Cu. Inches per lb.
6	270	1170	71.4	56.0	1.55
7	295	1262	77.0	54.9	1.52
8	355	1453	88.6	56.3	1.56
9	296	1582	96.5	56.7	1.57
10	326	1826	111.4	58.2	1.61
11	365	1981	120.8	57.1	1.59
12	315	2172	132.5	57.8	1.60
13	321	2384	145.4	57.2	1.58
14	251	2712	165.4	56.9	1.59
15	207	3189	194.6	58.6	1.62
16	140	3448	210.3	59.8	1.65
17	78	3781	230.6	60.5	1.69
18	62	3855	235.0	60.0	1.66

Girls					
Age	Number cases	Cc.	Cu. Inches	Cc per Kg.	Cu. Inches per lb.
6	249	981	59.8	48.5	1.35
7	292	1143	69.7	51.0	1.41
8	316	1303	79.5	51.3	1.42
9	318	1440	87.8	52.0	1.44
10	314	1601	97.7	52.5	1.45
11	318	1829	111.6	53.5	1.48
12	334	2032	124.0	51.4	1.43
13	351	2252	137.4	50.7	1.41
14	287	2441	148.9	50.1	1.39
15	253	2476	151.0	48.6	1.35
16	214	2598	158.5	48.9	1.35
17	129	2614	159.5	46.7	1.29
18	80	2588	157.9	46.8	1.30

TABLE VIII—LUNG CAPACITY AND VITAL INDEX, COUNTRY CHILDREN

Boys					
Age	Number cases	Cc.	Cu. Inches	Cc per Kg.	Cu. Inches per lb.
8	127	1439	87.8	54.9	1.52
9	108	1654	100.9	59.7	1.65
10	121	1781	108.6	58.2	1.61
11	105	1997	121.8	61.1	1.61
12	114	2105	128.4	58.5	1.62
13	74	2344	143.0	60.1	1.68
14	88	2719	165.9	60.5	1.66
15	51	3255	198.6	63.1	1.74
16	66	3257	198.7	56.1	1.55
17	44	3801	231.9	64.1	1.77
18	36	4496	274.3	68.8	1.90

Girls					
Age	Number cases	Cc.	Cu. Inches	Cc per Kg.	Cu. Inches per lb.
8	147	1274	77.7	53.1	1.47
9	115	1427	87.0	53.7	1.49
10	130	1617	98.6	54.1	1.50
11	106	1856	113.2	55.6	1.54
12	117	2002	122.7	51.2	1.43
13	116	2231	136.1	52.2	1.45
14	93	2478	151.2	52.6	1.46
15	79	2583	157.6	48.5	1.34
16	53	2788	170.0	51.8	1.43
17	62	2805	171.1	53.7	1.49
18	81	2833	172.8	51.8	1.44

TABLE IX—GRIP IN KG., CITY CHILDREN

Age	Number cases	Boys		Number cases	Girls	
		Right hand	Left hand		Right hand	Left hand
6	267	10.4	9.7	247	9.0	8.9
7	298	12.6	11.6	289	10.7	10.5
8	351	14.9	13.5	311	12.5	11.4
9	299	16.9	15.4	320	14.6	14.4
10	332	19.4	17.8	322	16.3	15.1
11	372	21.6	19.9	320	18.4	16.9
12	321	24.0	21.9	334	21.7	20.3
13	316	27.2	25.1	343	24.9	22.9
14	258	31.2	28.4	285	26.9	24.4
15	209	36.6	32.7	255	28.3	25.5
16	139	41.0	38.0	215	28.7	26.8
17	82	45.3	42.9	129	28.8	28.1
18	65	45.3	42.9	81	28.8	26.6

TABLE X—GRIP IN KG., COUNTRY CHILDREN

Age	Number cases	Boys		Number cases	Girls	
		Right hand	Left hand		Right hand	Left hand
8	127	14.3	13.1	147	12.5	11.4
9	108	16.4	15.2	115	14.3	13.1
10	121	17.6	16.4	130	15.6	14.9
11	106	19.6	18.2	106	17.4	16.3
12	114	21.8	20.5	117	21.0	19.6
13	74	23.9	22.5	116	21.9	22.2
14	88	28.3	26.3	93	25.3	24.3
15	51	32.6	31.3	79	28.4	26.8
16	66	40.5	37.9	53	29.5	27.9
17	44	42.0	40.0	62	30.7	28.4
18	36	50.5	46.3	81	31.5	29.2

TABLE XI—MUSCULAR SPEED, CITY CHILDREN

*Number of taps in thirty seconds.*

Age	Number cases	Boys		Number cases	Girls	
		Right hand	Left hand		Right hand	Left hand
6	268	112	100	249	112	99
7	294	120	104	292	124	104
8	353	131	111	315	129	111
9	296	137	118	315	138	119
10	320	148	126	310	146	126
11	361	155	132	314	155	133
12	316	161	138	327	162	142
13	319	172	146	347	168	147
14	248	172	150	275	172	151
15	206	183	160	251	174	153
16	140	186	164	212	181	160
17	79	195	173	138	184	166
18	61	206	176	82	185	167

TABLE XII—MUSCULAR SPEED, COUNTRY CHILDREN

*Number of taps in thirty seconds.*

Age	Number cases	Boys		Number cases	Girls	
		Right hand	Left hand		Right hand	Left hand
8	127	135	111	147	136	115
9	108	144	117	115	139	118
10	122	149	123	130	148	126
11	106	155	133	106	154	131
12	114	160	133	117	158	138
13	74	163	137	116	165	142
14	88	173	147	93	172	148
15	51	177	147	79	177	156
16	66	185	158	53	181	157
17	44	163	160	62	184	163
18	36	195	167	81	190	168



TABLE XIII—COMPARATIVE TABLE, CITY AND COUNTRY BOYS

*Physical Measures*

	Age	6	7	8	9	10	11	12	13	14	15	16	17	18	
St. Ht.	City Coun	45.4	47.2	50.0 49.8	52.5 51.3	53.6 53.0	55.2 55.0	57.8 56.8	59.1 58.6	61.2 61.2	64.2 64.4	65.6 64.3	67.4 64.3	67.7 69.4	Inches
Si. Ht.	City Coun	24.4	25.0	26.4 26.7	27.4 27.0	27.8 27.7	28.6 28.2	29.7 28.9	30.1 29.8	31.4 30.9	33.0 32.3	34.0 32.3	35.1 34.4	34.9 33.3	Inches
Wt.	City Coun	20.9	23.0	25.8 26.2	27.9 27.7	31.4 30.6	34.7 32.7	37.6 36.0	41.7 38.6	47.7 44.9	54.4 51.6	57.7 58.1	62.5 59.3	64.2 65.4	Kg.
Lung Cap.	City Coun	71	77	89 88	97 101	111 109	121 122	133 128	145 143	165 166	195 199	210 199	231 232	235 274	Cu. Inches
Vital Index	City Coun	1.55	1.52	1.56 1.52	1.57 1.65	1.61 1.61	1.59 1.61	1.60 1.62	1.58 1.68	1.59 1.66	1.62 1.74	1.68 1.55	1.69 1.77	1.66 1.90	Cu. In. Per Lb.
Grip Rt.Hd.	City Coun	10.4	12.6	14.9 14.3	16.9 16.4	19.4 17.6	21.6 19.6	24.0 21.8	27.2 23.9	31.2 28.3	36.6 32.6	41.0 40.5	45.3 42.0	45.3 50.5	Kg.
Speed Rt.Hd.	City Coun	112	120	131 135	137 144	148 149	155 155	161 160	172 163	172 173	183 177	186 185	195 163	206 195	Taps per 30 Sec.

For convenience in the above table, lung capacity is expressed in cubic inches and vital index in cubic inches per pound.

TABLE XIV—COMPARATIVE TABLE, CITY AND COUNTRY GIRLS

*Physical Measures*

	Age	6	7	8	9	10	11	12	13	14	15	16	17	18	
St. Ht.	City Coun	45.6	47.2	49.0 49.4	52.1 49.7	53.4 54.0	55.9 55.0	58.4 58.1	60.0 60.0	61.6 61.6	62.2 63.0	63.5 64.3	63.1 63.2	63.1 64.3	Inches
Si. Ht.	City Coun	24.6	25.1	25.8 26.1	26.8 26.2	27.5 27.7	28.7 28.2	30.2 29.6	31.1 30.5	31.9 31.7	32.5 32.1	33.1 32.4	33.1 32.9	33.0 33.1	Inches
Wt.	City Coun	20.2	22.4	25.4 24.0	27.7 26.6	30.5 29.9	34.2 33.4	39.5 39.1	44.4 42.7	48.7 47.1	50.9 53.3	53.1 53.8	56.0 52.2	55.3 54.7	Kg.
Lung Cap.	City Coun	60	70	80 88	88 101	98 109	112 122	124 128	137 143	149 166	151 199	159 199	160 232	158 274	Cu. Inches
Vital Index	City Coun	1.35	1.41	1.42 1.47	1.44 1.49	1.45 1.50	1.48 1.54	1.43 1.43	1.41 1.45	1.39 1.46	1.35 1.34	1.35 1.43	1.29 1.49	1.30 1.44	Cu. In. Per Lb.
Grip Rt.Hd.	City Coun	9.0	10.7	12.5 12.5	14.6 14.3	16.3 15.6	18.4 17.4	21.7 21.0	24.9 21.9	26.9 25.3	28.3 28.4	28.7 29.5	28.8 30.7	28.8 31.5	Kg.
Speed Rt.Hd.	City Coun	112	124	129 136	138 139	146 148	155 154	162 158	168 165	172 172	174 177	181 181	184 184	185 190	Taps per 30 Sec.

TABLE XV—ROTE MEMORY, CONCRETE, CITY CHILDREN

Age	Boys		Girls	
	Number Cases	Average	Number Cases	Average
8	176	17.46	172	18.59
9	249	19.77	297	19.76
10	348	20.82	321	20.94
11	376	22.03	330	22.81
12	346	23.30	347	24.22
13	339	24.12	358	24.69
14	266	24.83	304	24.97
15	277	25.40	247	25.78
16	155	25.66	183	26.96
17	76	26.72	121	27.28
18	46	27.15	64	27.52

TABLE XVI—ROTE MEMORY, ABSTRACT, CITY CHILDREN

Age	Boys		Girls	
	Number Cases	Average	Number Cases	Average
8	174	15.70	172	17.19
9	255	18.01	297	18.49
10	349	19.25	319	19.66
11	375	20.02	330	21.05
12	348	21.22	350	22.56
13	339	22.14	359	23.35
14	267	23.16	303	23.66
15	228	23.87	248	24.64
16	155	24.13	181	25.71
17	77	25.74	121	25.88
18	46	26.44	64	27.13

TABLE XVII—OPPOSITES, LIST I, CITY CHILDREN

Age	Boys		Girls	
	Number Cases	Average	Number Cases	Average
8	175	10.85	167	11.38
9	233	13.42	287	14.59
10	265	16.70	287	17.74
11	216	16.69	173	17.76
12	97	17.26	75	18.36

TABLE XVIII—OPPOSITES, LIST II, CITY CHILDREN

Age	Boys		Girls	
	Number Cases	Average	Number Cases	Average
10	81	8.31	70	7.44
11	180	8.74	183	8.50
12	250	9.37	301	10.13
13	293	10.19	349	11.05
14	243	11.28	292	12.28
15	213	13.10	224	14.64
16	134	14.12	179	16.69
17	62	15.55	98	19.29
18	39	15.34	57	17.77

TABLE XIX—LOGICAL MEMORY, *WILLIE JONES*, CITY CHILDREN

Age	Boys		Girls	
	Number Cases	Average	Number Cases	Average
8	235	25.14	222	27.31
9	320	27.83	371	29.21
10	379	29.98	133	32.31
11	275	31.56	143	31.69
12	138	31.04	101	34.10
13	81	31.38	49	33.48

TABLE XX—LOGICAL MEMORY, *FARMER'S SON*, CITY CHILDREN

Age	Boys		Girls	
	Number Cases	Average	Number Cases	Average
10	102	30.86	302	31.77
11	208	32.64	262	32.48
12	274	32.09	345	31.51
13	275	33.65	329	32.99
14	168	32.91	199	32.73
15	84	32.80	66	32.52

TABLE XXI—LOGICAL MEMORY, *COSTLY TEMPER*, CITY CHILDREN

Age	Boys		Girls	
	Number Cases	Average	Number Cases	Average
13	88	50.41	109	53.23
14	130	50.66	146	51.51
15	191	49.23	214	50.54
16	142	48.91	207	51.37
17	92	47.17	140	49.64
18	54	47.24	73	49.62

TABLE XXII—WORD-BUILDING, CITY CHILDREN

Age	Boys		Girls	
	Number Cases	Average	Number Cases	Average
8	172	5.74	182	5.73
9	249	6.02	295	6.69
10	339	7.49	321	7.80
11	365	8.41	322	9.01
12	339	9.28	336	10.38
13	318	10.53	355	11.82
14	249	11.42	287	12.82
15	193	12.62	212	14.29
16	138	14.21	167	15.30
17	70	15.27	102	17.12
18	30	15.31	57	17.49

TABLE XXIII—FREE ASSOCIATION, CITY CHILDREN

Age	Boys		Girls	
	Number Cases	Average	Number Cases	Average
8	186	21.51	186	24.50
9	264	25.29	316	28.92
10	366	31.21	337	35.45
11	384	34.77	352	40.39
12	359	38.96	376	45.07
13	346	42.91	377	49.74
14	264	46.58	309	53.56
15	222	51.70	236	54.49
16	150	53.57	182	59.12
17	87	53.74	115	59.59
18	40	52.79	66	58.27

TABLE XXIV—SUBSTITUTION, CITY CHILDREN

Age	Boys		Girls	
	Number Cases	Average	Number Cases	Average
8	223	7.95	213	9.11
9	296	10.08	355	10.86
10	410	11.81	386	13.82
11	443	13.43	387	15.88
12	399	15.48	433	18.29
13	401	16.80	424	20.31
14	308	19.26	344	22.21
15	255	22.13	274	24.17
16	173	23.71	217	26.92
17	93	26.42	141	28.12
18	52	24.41	86	28.39

TABLE XXV—COMPLETION TEST, CITY CHILDREN

*Joe and the Fourth of July*

Age	Boys		Girls	
	Number Cases	Average	Number Cases	Average
8	243	10.6	233	11.8
9	326	12.1	385	13.0
10	363	13.7	141	14.5
11	270	13.5	149	15.1
12	121	13.2	101	14.2
13	72	13.1	41	15.3

TABLE XXVI—COMPLETION TEST, CITY CHILDREN

*The Trout*

Age	Boys		Girls	
	Number Cases	Average	Number Cases	Average
10	103	15.7	306	14.6
11	223	17.1	267	15.4
12	262	16.6	329	16.4
13	260	18.1	282	20.0
14	169	18.0	216	18.5
15	92	18.4	81	19.2

TABLE XXVII—COMPLETION TEST, CITY CHILDREN  
*Dr. Goldsmith's Medicine*

Age	Boys		Girls	
	Number Cases	Average	Number Cases	Average
13	73	41.1	69	42.4
14	120	38.6	125	43.8
15	169	39.4	197	42.9
16	129	40.2	199	43.6
17	82	42.4	130	44.1
18	50	41.1	74	44.6

TABLE XXVIII—ANALOGUES, CITY CHILDREN

Age	Boys		Girls	
	Number Cases	Average	Number Cases	Average
8	120	1.3	120	1.7
9	167	2.6	282	2.3
10	246	4.6	244	4.3
11	281	4.9	244	5.9
12	242	6.5	248	7.8
13	238	8.4	244	10.2
14	192	9.4	227	10.1
15	134	10.3	161	11.2
16	98	11.7	119	12.8
17	39	15.3	73	12.9
18	14	13.8	36	14.6

TABLE XXIX—LOGICAL MEMORY, COUNTRY CHILDREN  
*The Marble Statue*

Age	Boys		Girls	
	Number Cases	Average	Number Cases	Average
8	70	5.1	115	5.9
9	123	8.9	89	8.1
10	177	11.4	146	11.2
11	199	13.9	116	17.0
12	141	17.6	186	20.4
13	180	17.7	110	24.7
14	88	20.0	140	28.7
15	72	24.3	80	29.6
16	30	22.4	30	34.3
17	33	28.2	31	32.5
18	21	29.8	23	37.2

TABLE XXX—COMPLETION, COUNTRY CHILDREN  
*Joe and the Fourth of July*

Age	Boys		Girls	
	Number Cases	Average	Number Cases	Average
8	110	4.4	122	5.3
9	101	5.5	81	5.3
10	112	6.9	124	6.9
11	125	8.0	112	9.9
12	121	8.4	111	10.3

TABLE XXXI—FREE ASSOCIATION, COUNTRY CHILDREN

Age	Boys		Girls	
	Number Cases	Average	Number Cases	Average
8	151	16.5	152	21.2
9	152	17.3	120	22.1
10	152	23.6	172	27.1
11	148	30.0	171	32.2
12	120	30.5	164	36.6
13	136	35.0	156	34.0
14	136	32.8	128	36.4
15	112	34.3	124	36.2
16	84	36.0	64	46.4
17	21	35.5	34	45.6
18	24	39.9	37	42.9

TABLE XXXII—OPPOSITES LIST NO. I, COUNTRY CHILDREN

Age	Boys		Girls	
	Number Cases	Average	Number Cases	Average
8	110	4.9	102	6.2
9	98	6.4	122	6.9
10	130	8.2	159	7.4
11	142	9.9	140	9.0
12	122	9.8	123	13.1



TABLE XXXIII—OPPOSITES LIST NO. II, COUNTRY CHILDREN

Age	Boys		Girls	
	Number Cases	Average	Number Cases	Average
10	126	5.1	149	5.4
11	140	5.7	130	5.6
12	112	5.6	144	7.2
13	146	6.8	112	7.2
14	112	7.1	130	8.8
15	86	7.2	82	10.3
16	56	9.8	33	11.6
17	30	10.5	30	12.9
18	29	11.0	29	12.5

TABLE XXXIV—SUBSTITUTION, COUNTRY CHILDREN

Age	Boys		Girls	
	Number Cases	Average	Number Cases	Average
8	113	6.0	134	7.1
9	117	7.7	101	8.4
10	130	9.2	152	11.9
11	150	12.4	141	15.2
12	125	14.6	138	19.8
13	106	17.3	154	21.9
14	112	19.8	124	23.5
15	80	20.5	92	24.8
16	52	21.2	50	27.6
17	17	22.4	30	28.6
18	28	25.5	30	28.3

TABLE XXXV—ROTE MEMORY, CONCRETE, COUNTRY CHILDREN

Age	Boys		Girls	
	Number Cases	Average	Number Cases	Average
8	120	13.4	138	14.5
9	120	14.8	98	16.5
10	146	18.3	150	18.2
11	124	21.0	138	21.5
12	108	21.8	128	22.7
13	122	22.2	118	25.7
14	104	22.4	130	26.2
15	74	24.6	94	27.5
16	54	24.4	52	26.8
17	30	26.5	23	27.7
18	25	25.8	32	27.3

TABLE XXXVI—ROTE MEMORY, ABSTRACT, COUNTRY CHILDREN

Age	Boys		Girls	
	Number Cases	Average	Number Cases	Average
8	115	11.2	133	11.5
9	120	11.3	94	13.6
10	144	14.3	150	13.9
11	124	17.0	138	17.7
12	108	19.0	144	20.5
13	122	19.0	120	22.4
14	106	20.6	128	24.1
15	76	22.0	94	23.3
16	54	21.2	54	25.6
17	30	24.5	23	27.1
18	25	22.9	32	26.5

TABLE XXXVII—COMPARATIVE TABLE, CITY AND COUNTRY BOYS

*Mental Measures*

	Age	8	9	10	11	12	13	14	15	16	17	18
Substi- tution	City Country	7.9 6.0	10.0 7.7	11.8 9.2	13.4 12.4	15.4 14.6	16.8 17.3	19.2 19.8	22.1 20.5	23.7 21.2	26.4 22.4	24.4 25.5
Free Association	City Country	21.5 16.5	25.2 17.3	31.2 23.6	34.7 30.0	38.9 38.5	42.9 35.0	46.5 32.8	51.7 34.3	53.5 36.0	53.7 35.5	52.7 39.9
Rote Memory Concrete	City Country	17.4 13.4	19.7 14.8	20.8 18.3	22.0 21.0	23.3 21.8	24.1 22.2	24.8 22.4	25.4 24.6	25.6 24.4	26.7 26.5	27.1 25.8
Rote Memory Abstract	City Country	15.7 11.2	18.0 11.3	19.2 4.3	20.0 17.0	19.0 21.2	19.0 22.1	20.6 23.1	22.0 23.8	21.2 24.1	24.5 25.7	22.9 26.4
Opposites I	City Country	10.8 4.9	13.4 6.4	16.7 8.2	16.6 9.9	17.2 9.8	11.0	11.7	12.6	13.5	14.9	15.2
Opposites II	City Country	3.8	3.5	8.3 5.1	8.7 5.7	9.3 5.6	10.1 6.8	11.2 7.1	13.1 7.2	14.1 9.8	15.5 10.5	15.3 11.0
Completion Joe and 4th	City Country	10.6 4.4	12.1 5.5	13.7 6.9	13.5 8.0	13.2 8.4	13.1 9.8	11.4				

TABLE XXXVIII—COMPARATIVE TABLE, CITY AND COUNTRY GIRLS

*Mental Measures*

	Age	8	9	10	11	12	13	14	15	16	17	18
Substitution	City Country	9.1 7.1	10.8 8.4	13.8 11.9	15.8 15.2	18.2 19.8	20.3 21.9	22.2 23.5	24.1 24.8	26.9 27.6	28.1 28.6	28.3 28.3
Free Association	City Country	24.5 21.2	28.9 22.1	35.4 27.1	40.3 32.2	45.0 36.6	49.7 34.0	53.5 36.4	54.4 36.2	59.1 46.4	59.5 45.6	58.2 42.9
Rote Memory Concrete	City Country	18.5 14.5	19.7 16.5	20.9 18.2	22.8 21.5	24.2 22.7	24.6 25.7	24.9 26.2	25.7 27.5	26.9 26.8	27.2 27.7	27.5 27.3
Rote Memory Abstract	City Country	17.1 11.5	18.4 13.6	19.6 13.9	21.0 17.7	22.5 20.5	23.3 22.4	23.6 24.1	24.6 23.3	25.7 25.6	25.8 27.1	27.1 26.5
Opposites I	City Country	11.3 6.2	14.5 6.9	17.7 7.4	17.7 9.0	18.3 13.1	12.4	14.8	15.0	16.7	16.9	16.6
Opposites II	City Country	4.4	5.0	7.4 5.4	8.5 5.6	10.1 7.2	11.0 7.2	12.2 8.8	14.6 10.3	16.6 11.6	19.2 12.9	17.7 12.5
Completion Joe and 4th	City Country	11.8 5.3	13.0 5.3	14.5 6.9	15.1 9.9	14.2 10.3	15.3 10.0	12.4				

TABLE XXXIX—MENTAL NORMS BY GRADES, CITY CHILDREN

Grade		Completion	Word Building	Free Assn.	Substitution	Rote Mem. Concrete	Rote Mem. Abstract	Logical Memory	Analogues	Opposites
3	Boys	9.3	4.6	20.4	6.5	16.8	13.7	23.1	1.2	10.9
	Girls	10.4	5.1	23.7	6.8	15.6	14.3	23.6	2.2	11.5
4	Boys	13.0	6.1	28.4	9.8	18.7	17.3	29.2	2.8	16.3
	Girls	14.0	6.5	33.2	11.2	20.2	18.4	30.9	3.4	18.5
5	Boys	15.4	7.2	35.8	13.2	21.4	19.6	32.8	3.9	21.1
	Girls	16.5	7.6	39.7	14.6	21.6	19.7	34.8	5.2	21.3
6	Boys	14.3	9.3	41.9	14.4	23.0	20.7	28.7	6.8	7.4
	Girls	13.8	10.0	45.1	15.9	23.2	21.2	29.6	7.4	8.0
7	Boys	17.2	10.4	50.5	16.4	23.8	21.9	33.0	8.6	9.1
	Girls	16.9	11.2	51.6	19.5	24.1	22.8	29.9	8.9	9.8
8	Boys	18.8	11.3	49.8	20.6	24.7	23.0	34.2	10.4	11.0
	Girls	19.5	12.3	55.8	21.5	24.9	23.7	34.6	10.8	11.1
9	Boys	42.7	13.7	54.5	21.8	25.3	23.9	48.4	11.3	12.4
	Girls	42.5	14.6	58.8	22.0	25.0	24.0	50.8	11.4	15.4
10	Boys	41.3	13.8	58.0	24.5	25.8	24.3	50.6	13.0	17.6
	Girls	43.7	15.7	64.1	26.2	25.8	24.6	53.9	12.7	19.6
11	Boys	43.7	17.2	65.3	27.3	26.1	24.5	52.6	15.4	16.1
	Girls	45.7	15.2	66.7	28.6	26.8	25.7	54.9	14.6	19.4
12	Boys	44.0	16.5	63.1	28.2	27.0	25.0	52.4	15.0	15.9
	Girls	44.8	18.7	67.0	27.9	26.6	25.8	51.7	14.1	19.4

Completion test, grades 3, 4 and 5, *Joe and the Fourth of July*; grades 6, 7 and 8, *The Trout*; grades 9, 10, 11 and 12, *Dr. Goldsmith's Medicine*. Opposites I in grades 3, 4 and 5; II in grades above. Logical Memory, *Willie Jones* in grades 3, 4 and 5; *Farmer's Son* in 6, 7 and 8; *Costly Temper* in grades 9, 10, 11 and 12.

### TEST MATERIAL FOR THE MENTAL TESTS

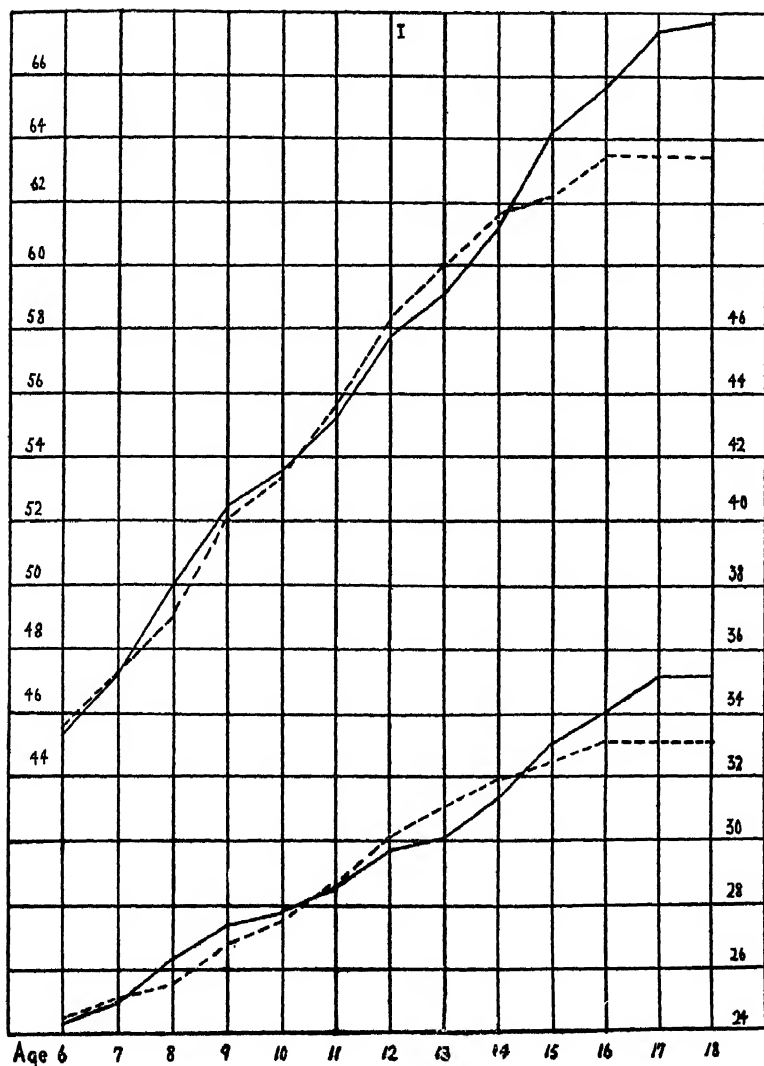
For Opposites: List I for grades three, four and five; list II, for grades six and above.

For Analogues, the Analogues Test Sheets.

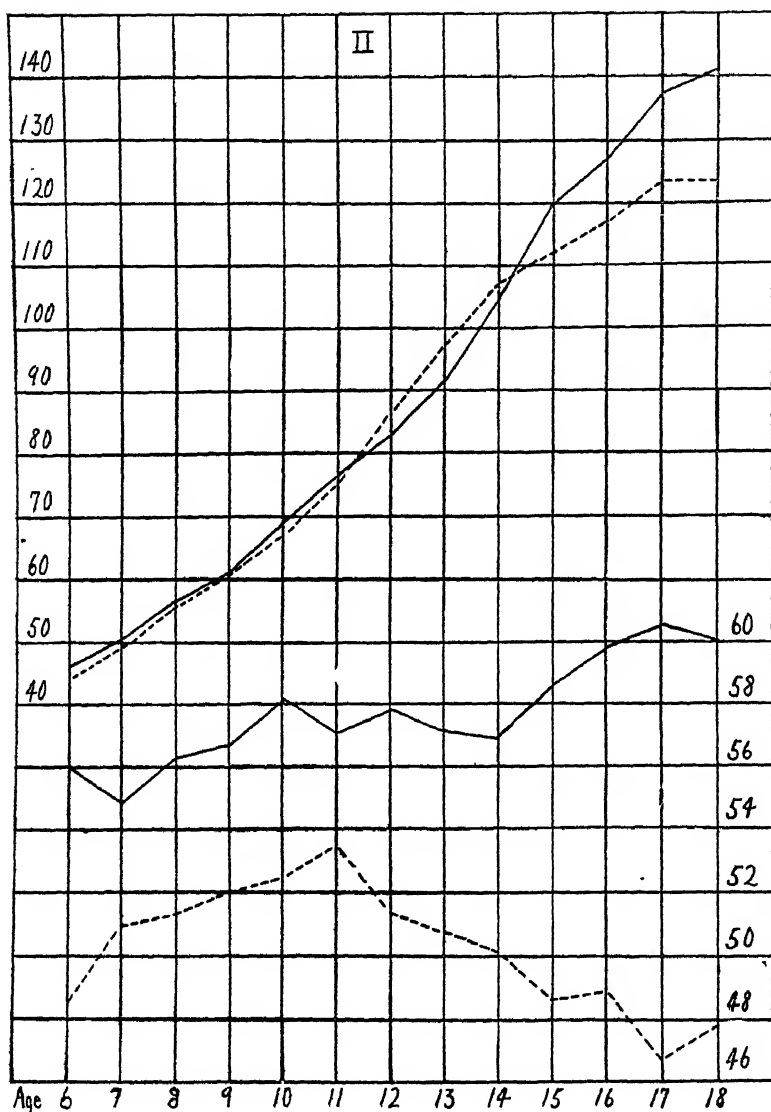
For Substitution, the Substitution Test Sheets.

For Completion, *Joe and the Fourth of July*, for grades three, four and five; *The Trout* for grades six, seven and eight; *Dr. Goldsmith's Medicine* for the high school.

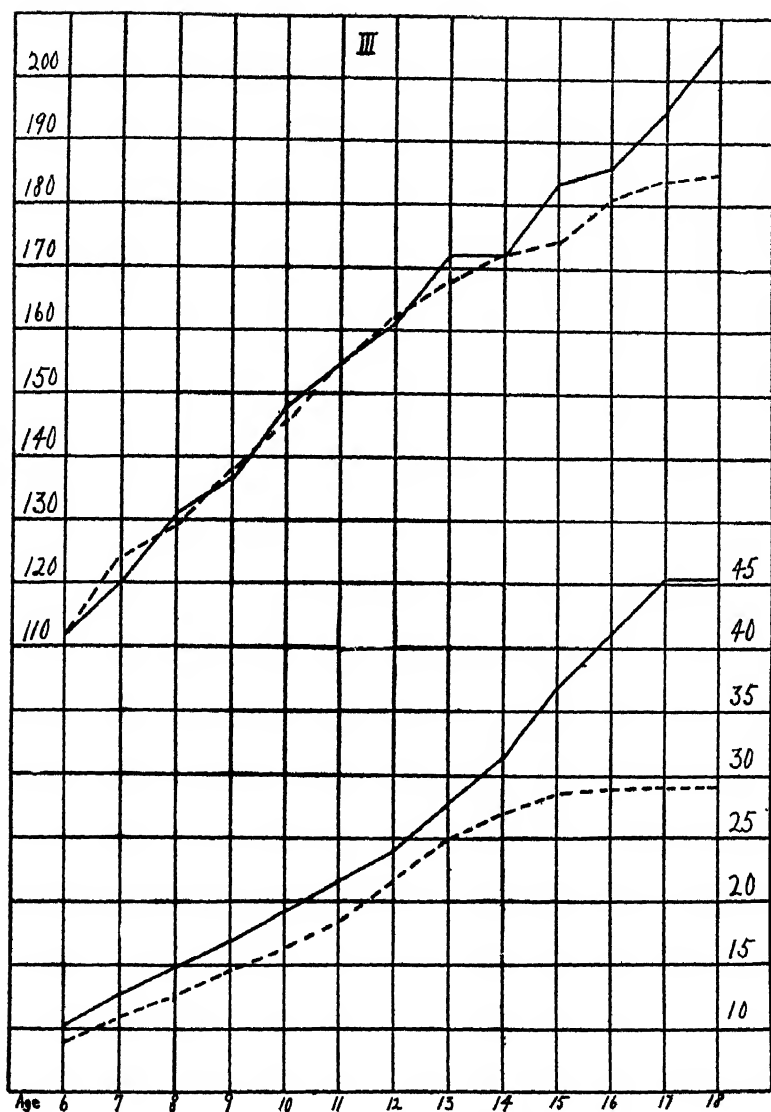
For the other tests no material is needed except writing paper.



I. Height in inches. Upper graphs, standing height; lower graphs, sitting height. Solid line, boys; broken line, girls.



II. Weight in pounds, upper graph; vital index, Cc. per Kg., lower graph. Solid line, boys; broken line, girls.



III. Tapping speed right hand, upper graphs; grip in Kg. right hand, lower graphs. Solid line, boys; broken line, girls.





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VOLUME 29, NUMBER 14

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EXTENSION SERIES NO. 56  
CHARLES H. WILLIAMS, EDITOR

## EXTENSION DIVISION

ANNOUNCEMENT OF CORRESPONDENCE COURSES, 1928



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APRIL 7, 1928



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# Announcement of Correspondence Courses

## TAKING THE UNIVERSITY TO THE STATE

The University of Missouri wishes to bring a practical education within the reach of every citizen of the State. Correspondence courses are intended to bring the work of the University into the homes of those citizens who are unable to attend regular classes at Columbia. Any person can begin courses for which he is qualified at any time. All college credit courses, given by correspondence or extension lecture, by the Extension Division, count for regular credit in the University. College credit courses count for approved grades on State certificates. High school courses by correspondence count for entrance credit to the University. In addition, there are a number of special courses in Agriculture, very practical in character, which count for credit toward the Two-Year Winter Course only, but which are especially designed to meet the needs of people living on farms. Through correspondence work, the University reaches people of practically every profession and vocation.

## SPECIAL COURSES FOR TEACHERS

A large number of courses have been especially designed to meet the needs of teachers. Among the 3400 students taking correspondence and extension courses at the present time, more than 2500 are teachers. Any teacher can find sufficient spare time in the evenings and on Saturday to finish two or more courses by correspondence during the year, thus securing actual credit toward graduation at a very small expense while engaged in regular work.

## APPROVED GRADES FOR STATE CERTIFICATES

Under a recent ruling of the State Department of Education, credit made with the University through correspondence, extension center, or extension class courses, will count as approved grades for State certificates. This ruling will be of very great benefit to teachers, permitting them to obtain approved grades on State certificates while continuing their work in the school-room. High school courses and short courses in Agriculture are not included in this ruling. If you are interested in credit on a State certificate, write to Mr. Charles A. Lee, State Superintendent of Schools, Jefferson City, Missouri, making sure that the course or courses you intend to take with us fit in with your other State credits and will thus count on your certificate.

## CREDIT TOWARD THE STATE REQUIREMENTS FOR TEACHING

A minimum requirement is now made by the State Department of Education for accrediting teachers in practically every line of work. University credits in college subjects secured by correspondence, extension center, or extension class, will count toward the requirements for teaching high school subjects. Persons expecting to teach Agriculture must have at least three hours' credit made in residence, in order to familiarize them with laboratory work. High school subjects taken by correspondence with the University will assist teachers in grades and rural schools in meeting the state requirement that all teachers must possess the equivalent of four years of high school work. Teachers wishing to remain in the profession should not delay meeting the state requirements at the earliest time possible. Adequate training is now being demanded of all teachers.

## GENERAL INFORMATION

All college credit courses given by the Extension Division by correspondence, extension center, or extension class, count for regular credit in the University.

University credit is counted in "hours". A total of 120 hours' work is required for the degree of B. S. in Education; 124 hours for the A. B. degree.

For admission to University courses for college credit, a student must meet the regular University entrance requirements or be 21 years old and qualified for the work desired. The ability of the student to enter upon the work of any individual course is passed upon by the instructor in charge of the course. Students eliminated from the University can not receive credit for any correspondence course taken during the time for which they are eliminated.

Students less than 21 years old who are not graduates of a four-year high school fully accredited by the University of Missouri at the time of their graduation, should communicate with the Registrar of the University, Columbia, Missouri, concerning their admission to the University before making application for college correspondence courses.

Persons who have finished the eighth grade are entitled to admission to high school courses. Anyone wishing credit in high school subjects should write to the Extension Division for the bulletin on Correspondence Courses in High School Subjects. Highschool courses taken by correspondence count on entrance requirements to the University.

Correspondence work is as thorough as that done in actual attendance.

Courses may be begun at any time (including vacation).

No preliminary examination is required.

Credit is given for correspondence work as soon as a course is satisfactorily completed. No credit is held in abeyance.

Correspondence credit can be transferred to other state educational institutions of Missouri, and in fact to most colleges and universities of the United States, except in the case of graduate courses, which are decided upon by each separate school. Any request for the transfer of credit to other institutions should be sent to the Registrar of the University of Missouri.

Students are not allowed, except by special permission, and then only when they are carrying less than the maximum amount of work, either to begin or to continue correspondence courses while taking work in residence at the University of Missouri or at any other school. Students must notify the Extension Division when they are taking correspondence or residence work in some other school or when they are enrolled for residence work in the University. Students are held individually responsible for any violation of this rule.

The time required for preparation of lessons is usually from one and a half to two hours daily, depending upon the ability of the student.

In no case shall extramural work be counted in lieu of the requirement of two terms in residence. All the last twenty-four hours of credit for the A. B. degree, the degree of B. S. in Education, or the degree of B. S. in Agriculture, must be made in actual residence except by special permission of the dean. In granting this permission, the dean of the College of Arts and Science is limited by a regulation that not more than six hours in the last twenty-four counted toward the A. B. degree may be done by correspondence, and that these six hours must be the last six necessary for that degree. The deans of the School of Education and the College of Agriculture are limited by a regulation that not more than seven hours in the last twenty-four counted toward the B. S. in Education or the B. S. in Agriculture may be done by correspondence. In all cases where correspondence courses are to count for credit in the senior year, students must secure the approval of the dean.

The maximum work by correspondence, extension center and extension class courses is ten normal credit hours for one calendar year, except by special permission.

By special permission this amount may be increased to twenty hours. Teachers may complete not more than ten hours during the time that they are actually teaching (from September until such time as their service for the year may close).

The time allowed for completion of a correspondence course is one year from the date of enrollment. However, by the payment of a fee of \$1.00 an extension of six months' time may be granted. Upon the payment of an additional \$2.00, another six months' extension may be granted, making a maximum of one year from the time the course expires. During an instructor's vacation, a substitute is provided to carry on his course whenever possible.

Fees may be transferred from one course to another when a student finds it impossible to complete the first course, and presents a good reason for the transfer. This transfer must be made before the expiration of the time for the first course. A fee of \$1.00 is charged to cover the cost of the transfer, and it is also necessary for the student to pay for the lessons which have been graded for the course from which he is being transferred.

Correspondence students are expected to pay full postage both ways on all lesson papers and to pay the express charges both ways on all apparatus.

Colored students will be permitted to take correspondence courses for which they are prepared, but their credits will be transferred to Lincoln University.

No fees paid for correspondence courses will be refunded.

#### SPECIAL ADVANTAGES TO TEACHERS

1. Approved credit on state certificates.
2. Teachers working toward the A. B. or B. S. degree can secure one-third of the entire credit toward those degrees through correspondence courses if they so desire, subject only to the regulation that 24 hours of the last year's work must be done in residence at the University.
3. Teachers desiring to qualify to teach some special high school subject can do so by correspondence.
4. Teachers in the grades in town and city schools can meet the state requirements by correspondence. These requirements are rapidly being raised, especially in the grades in towns and cities having first-class high schools or teacher training high schools.
5. Teachers in the grades in village schools, and teachers in the rural schools, through high school courses given by correspondence, can prepare themselves to meet the state requirement that all teachers must possess the equivalent of four years of high school work. Teachers wishing to remain in the profession should not delay completing their high school work.

If information on courses not here announced is desired, write the Director of University Extension. In case high school subjects are desired, ask for the bulletin on Correspondence Courses in High School Subjects. Every effort will be made to assist you. The constant aim of the University is to come into vital touch with the people of the state.

#### GRADUATE CREDIT

#### GRADUATE CREDIT POSSIBLE BEFORE RESIDENCE WORK IN THE GRADUATE SCHOOL

Students who are prepared to enter the Graduate School of the University of Missouri, but who have not taken any graduate work in residence, can begin their work by correspondence with the University of Missouri and secure full credit, provided the work taken fits in with their subsequent courses and can be counted upon their major subjects. Usually (but not always) any one of the courses offered



by one of our departments for graduate credit will count upon the major in that department, but it may not count upon the major in another department. The student taking graduate courses by correspondence before coming to the University should upon taking up work in residence, consult with his adviser and the Dean of the Graduate School with reference to including his pre-residence correspondence work in the major which he has chosen. There will then probably be little trouble about the correspondence work counting upon the A. M. degree.

The maximum graduate credit which can be secured by correspondence work before residence is four hours. (The student may secure twelve hours' credit by extension center courses before the establishment of residence.)

Correspondence or extension work with other institutions will not be accepted for graduate credit at the University of Missouri.

### GRADUATE CREDIT POSSIBLE AFTER ONE SUMMER OF RESIDENCE WORK IN THE GRADUATE SCHOOL

Students who have been in attendance at the University of Missouri for one summer session in the graduate school can, with the approval of the dean of the Graduate School, take a maximum of eight hours' work by correspondence for graduate credit. Students who have taken four hours' graduate credit by correspondence before enrolling in residence in the graduate school can take only four hours' additional by correspondence after enrolling.

The Extension Division makes the following announcement of courses which can be taken by correspondence for graduate credit, subject to change.

Special information concerning these courses will be found in the proper place in the bulletin, from pages 12 to 30.

## AGRICULTURE

### AGRICULTURAL ENGINEERING

103. Farm Buildings and Their Equipment

### ENTOMOLOGY

120. Special Problems in Economic Entomology

200. Research

## EDUCATION

A205e. The Psychology of Education

C170e. Educational Statistics

C175e. Administration of Educational Tests and Measurements

C180e. Administration of Public Education in the United States

C250. Research in Educational Administration

D170. Elementary School Curriculum

D184e. Projects in Moral Education

D265e. Research in School Supervision

E107e. The Supervised Practice in Vocational Agriculture

E120e. Community Educational Activities in Vocational Agriculture

## HISTORY

155e. The Renaissance

160e. The French Revolution

190e. American Diplomatic History

## LATIN

210e. Roman Literature Studied through Selections from Latin.

## MATHEMATICS

- 105. Advanced Algebra
- 120. Differential Equations and Their Applications

## PHYSICS

- 110e. Electricity and Magnetism
- 112e. Heat

## POLITICAL SCIENCE

- 220. Seminary

## ROMANCE LANGUAGES

- 137e. The Modern Spanish Novel
- 231e and 232e. Seminary in Spanish Literature

## SOCIOLOGY

- 110e. Social Pathology
- 111. Criminology
- 112. Child Welfare
- 114. The Family
- 115. Rural Sociology
- 116. Urban Sociology

## AGRICULTURE SHORT COURSES BY CORRESPONDENCE

Short courses in Agriculture by correspondence are now being offered by the University of Missouri. The following courses will count for credit toward the certificate offered in the Two-Year Winter Course in Agriculture if the student successfully passes the work and later comes to the University and enrolls in the Two-Year Winter Course in Agriculture.

Agricultural Economics, courses 2n, 3n, 6tw; Animal Husbandry, courses 1n, 2n, 3n, 4n (provided all four courses are taken), 4tw, 8tw, 9tw, 10tf, and 11tf; Field Crops, courses 1n, 2n; Horticulture, course 5n; and Soils, courses 1tw and 2tf.

These courses will not count for college credit and will not be accepted for credit toward any regular degree from the University of Missouri. They will, however, count as high school credit toward entrance to the University. One unit of high school credit will be given for 16 units in the Short Course.

## AGRICULTURAL ECONOMICS

2n. **FARM ACCOUNTS.** This course consists of the complete financial record of a farm throughout the year. Special attention is paid to the farm inventory, financial and income tax statements, labor records, feed statements, distribution of overhead expenses and the value of records in reorganizing the farm for more profits.

As no satisfactory textbook on farm accounts has been published, no text is assigned. The bulletins used as reference will be sent with the assignments for the course. Each student is required to purchase a farm account book which can be secured from the Agricultural Extension Service, Columbia, Missouri, for 25 cents. 5 units' credit.

3n. **GENERAL FARM MANAGEMENT.** The object of this course will be to give the student a view of farming as a business and to work up a complete farm plan for a particular farm. Each student makes a map of his home farm, and with this as a basis replans the practical farm operations. Text, Warren, G. F., *Farm Management*, (The Macmillan Co., Publishers), 1913 edition. 3 units' credit.

6tw. **GENERAL FARM MARKETING.** A study of the fundamentals and development of cooperative marketing; the cooperative methods of marketing the major farm products such as grain, dairy products, livestock, fruit and vegetables, cotton,

tobacco, wool, eggs, and poultry; and the problems involved in the organization and management of cooperative companies. Text, Jesness, O. B., *Co-operative Marketing of Farm Products*, (J. B. Lippincott and Co., Philadelphia, Publishers), 1923 edition. 3 units' credit.

#### ANIMAL HUSBANDRY

- 1n. TYPES AND BREEDS OF HOGS. 1 unit's credit.
- 2n. TYPES AND BREEDS OF CATTLE. 1 unit's credit.
- 3n. TYPES AND BREEDS OF HORSES. 1 unit's credit.
- 4n. TYPES AND BREEDS OF SHEEP. 1 unit's credit.

If all four of the above courses in Animal Husbandry are taken, three units' credit will be given toward the Two-Year Winter Course in Agriculture. *No credit will be given for less than four of them.* These courses treat of the fundamentals of livestock judging. A study is made of animal form and character. The names and location of parts, indications of feeding quality, constitutional vigor and capacity for production of meat, milk, wool, speed and work are taken up with special reference to market requirements. Text, Vaughn, *Types and Market Classes of Livestock*, (R. G. Adams and Co., Publishers), 1923 edition.

5n. FEEDS AND FEEDING. Feeding standards are carefully studied to teach the food requirements of different classes of farm animals. A study is made of the composition, digestibility, and relative feeding value of the various hays, grains, mill feeds, and miscellaneous feeding stuffs. Text, Henry and Morrison, *Feeds and Feeding*, (The Henry Morrison Co., Publishers), 1923 edition. 3 units' credit. (*This course will not give credit toward the Short Course in Agriculture or any degree from the University.*)

4tw. ANIMAL BREEDING. A course in the principles of animal breeding. This course will include a brief survey of the physiology of reproduction and the application of biology to the practice of animal breeding. Text, Mumford, *The Breeding of Animals*, (The Macmillan Co., Publishers), 1918 edition. 3 units' credit.

8tw. BEEF PRODUCTION. A discussion of practical methods of beef production, of successful practices in feeding for market, feeding for show, and of the general care and management of beef cattle. Text, Henry and Morrison, *Feeds and Feeding*, (The Henry Morrison Co., Publishers), 1923 edition. 3 units' credit.

9tw. PORK PRODUCTION. Approved systems of swine management. A discussion of foodstuffs with special reference to their adaptability to pork production, the feeding of hogs for market and the feeding and marketing of the commercial and pure bred breeding herd, is emphasized. Text, Smith, *Pork Production*, (The Macmillan Co., Publishers), 1921 edition. 3 units' credit.

10tf. SHEEP PRODUCTION. A study of the various systems of sheep management. The raising of sheep both for mutton and for wool, the production of spring lambs, the fattening of sheep and lambs, and the general care and management of the breeding flock is emphasized. Text, Coffey, W. C., *Productive Sheep Husbandry*, (J. B. Lippincott and Co., Publishers), 1918 edition. 3 units' credit.

11tf. HORSE PRODUCTION. A discussion of practical methods of horse production including breeding, growing, and marketing horses of all classes. Text, Gay, *Productive Horse Husbandry*, (J. B. Lippincott and Co., Publishers), 1914 edition. 3 units' credit.

#### FIELD CROPS

1n. GRAIN CROPS. A general course in improved methods of producing corn and other grain crops. Special attention is given to cultural methods and to the improvement of varieties. Text, Etheridge, W. C., *Field Crops*, (Ginn and Company, Publishers). 2 units' credit.

2n. **FORAGE CROPS.** A general course in improved methods of producing the important hay and forage crops of Missouri. Special attention is given to the utilization of these crops in cropping systems adapted to Missouri farms. Text, Etheridge, W. C., *Field Crops*, (Ginn and Company, Publishers). 2 units' credit.

#### HORTICULTURE

5n. **VEGETABLE GARDENING.** The object of this course is to take up the treatment of the home garden. The subjects of location, soil management, tillage, fertilizing, and control of diseases and insects will be considered before taking up studies of special crops. Texts, Lloyd, *Productive Vegetable Gardening*, (J. B. Lippincott and Co., Publishers), 1923 edition; Watts, Ralph L., *Vegetable Gardening*, (Orange Judd Co., Publishers), 1922 revised edition. 2 units' credit.

#### SOILS

1tw. **SOIL TILLAGE AND CULTURAL METHODS.** In this course the student learns the best methods of tilling and cultivating the soil. The methods of controlling the moisture in the soil are given special emphasis. How to prepare the seed bed, eradicate weeds, and maintain good tilth are other features of the work. Text, Weir, W. W., *Productive Soils*, (J. B. Lippincott and Co., Philadelphia, Publishers), 1920 edition. 3 units' credit.

2tf. **SOIL FERTILITY, MANURES, AND FERTILIZERS.** This course follows the preceding course in Soil Tillage and Cultural Methods. A discussion of soil fertility and the methods of maintaining the productivity of soils is given. The relation of various crops to soil exhaustion and to soil improvement is considered. The methods of handling manures and fertilizers receive particular attention. The course is designed to bring out the principles of soil handling and fertilizing in order to maintain the highest state of productiveness. Text, Weir, W. W., *Productive Soils*, (J. B. Lippincott and Co., Philadelphia, Publishers), 1920 edition. 3 units' credit.

### COST OF SHORT COURSES IN AGRICULTURE

The enrollment fees are as follows:

1 unit course (4 assignments).....	\$ 2.00
2 unit course (8 assignments).....	4.00
3 unit course (12 assignments).....	6.00
4 unit course (16 assignments).....	8.00
5 unit course (20 assignments).....	10.00

### COLLEGE CREDIT COURSES

**CREDITS.** All college credit courses offered by correspondence count for credit toward the A. B. degree, except education, courses C170e, C175e, C180e, D120, D170; and all courses in agriculture. Course C150 in education; also the courses in the teaching of the various subjects, will be accepted for credit under a regulation which permits electives from other divisions to be presented toward an A. B. degree to an amount not exceeding nine hours in all. All college courses taken by correspondence count toward the B. S. in Education. College courses in Agriculture count toward the B. S. in Education and the B. S. in Agriculture. For regulations concerning the counting of electives from the College of Arts and Science in other divisions, see the University Catalog.

### AGRICULTURE

#### CREDIT TOWARD THE STATE REQUIREMENT

A minimum of 10 hours' credit in Agriculture is now required by the State Department of Education for accrediting teachers of that subject in second and third class high schools, and a minimum of 15 hours' credit in first class high schools. The State Department requires that definite amounts of this credit be held in certain

departments of agricultural work such as Plant Production, Animal Husbandry and Soils. All courses in Agriculture listed below, if taken for credit, count on these requirements, provided they are properly distributed in the various departments of Agriculture, as required by the State Department, and provided further that each teacher must take at least three hours of this work in residence to become familiar with laboratory work. Students who are doubtful as to the exact courses they should take should ask a detailed statement from the State Department of Education as to the particular fields of Agriculture in which they lack credits.

#### AGRICULTURAL ECONOMICS

101e. PRINCIPLES OF MARKETING. Prerequisite, 5 hours of Economics. A study of the problems involved in marketing farm products, such as the country shipping point, wholesaling and retailing, transportation, storage, grading and standardizing, financing, prices, speculation, the produce exchanges, and co-operative organization. 2 hours' credit.

#### AGRICULTURAL EDUCATION

D155e. PRACTICE TEACHING IN VOCATIONAL AGRICULTURE. This course is open only to men who are teaching agriculture. The first twenty lessons deal with the specific problems of classroom instruction; the balance are concerned with problem planning as a guide in teaching. The student should use two of the following books as references: Schmidt, *New Methods in Teaching Vocational Agriculture*, (The Century Co., Publishers); Storm and Davis, *How to Teach Vocational Agriculture*, (Lippincott Co., Philadelphia, Publishers); Stewart and Getman, *Teaching Agricultural Vocations*; Wheeler, *Methods in Farmer Training*, (Turner E. Smith Co., Atlanta, Georgia, Publishers), 1925 edition. 5 hours' credit.

E107e. THE SUPERVISED PRACTICE IN VOCATIONAL AGRICULTURE. For graduate students only. This course includes a study of the principles and practices involved in the use of the project as they should be applied in the teaching of vocational agriculture. Project study, outlining, planning, and supervision are discussed in a manner applicable to actual conditions. Texts, Schmidt, G. A., *Projects and the Project Method in Agricultural Education*, (The Century Co., New York, Publishers), 1925 edition; The Federal Board for Vocational Education Bulletin 112, *Supervised Practice in Agriculture Including Home Projects*, (Federal Board of Vocational Education, Washington, D. C., Publishers). 2 hours' credit.

E120e. COMMUNITY EDUCATIONAL ACTIVITIES IN VOCATIONAL AGRICULTURE. A study of the work of teachers of agriculture in their extension activities. Particular attention is given to the problems of evening and part-time schools. There is no text dealing primarily with this field. The student should provide himself with one or both of the following books: Wheeler, J. T., *Methods in Farmer Training*, (Turner E. Smith Co., Atlanta, Georgia, Publishers), 1925 edition; Schmidt, G. A., *New Methods in Teaching Vocational Agriculture*, (The Century Co., New York, Publishers), 1925 edition. 2 hours' credit.

#### AGRICULTURAL ENGINEERING

103. FARM BUILDINGS AND THEIR EQUIPMENT. Arrangement of buildings on the farmstead. Requirements of the farm house, barns, hog houses, poultry houses, silos, granaries, etc., as to convenience, sanitation, ventilation and cost. Heating, lighting, water and sewage disposal systems for the farm home. Texts, Foster and Carter, *Farm Buildings*, (John Wylie and Sons, Inc., New York, Publishers), any edition; *Building Books*, (Lowden Machinery Co., Fairfield, Iowa, Publishers), any edition; Sherlock, *Modern Farmyard Buildings*, (Homestead Co., Des Moines, Iowa, Publishers), any edition; *Building Books*, (Iowa Gate Co., Cedar Falls, Iowa, Publishers), any edition. 3 hours' credit.

## ENTOMOLOGY

109. BEEKEEPING. This course covers the entire field of beekeeping. It includes such practical work as hiving swarms, moving bees, extracting honey, packing bees for the winter, rearing queens, and the like. It also deals with the more technical questions of external and internal anatomy, brood rearing, reproduction and the like. One or more colonies of bees should be available for use with the practical work. Text, Phillips, E. F., *Beekeeping*, (The Macmillan Co., Publishers), 1915 edition. 2 hours' credit.

120. SPECIAL PROBLEMS. Scheduled primarily for students who wish to take up special problems in economic entomology. Text, Sanderson and Peairs, *Insect Pest of Farm, Garden, and Orchard*, (John Wiley and Sons, Publishers), 1921 edition. 3 hours' credit.

200. RESEARCH. Open to those who have had sufficient zoological and entomological training to fit them for original research.

## FIELD CROPS

1e. FIELD CROPS. An introductory course dealing with the production of the most important field crops, with special reference to Missouri conditions. Texts, Etheridge, W. C., *Field Crops*, (Ginn and Company, Publishers). 3 hours' credit.

(Candidates for the B. S. in Agriculture taking this course, unless excused, will be required on coming to the University, to complete two hours of laboratory work to make up a total of five hours in Field Crops 1.)

## HORTICULTURE

3e. VEGETABLE GARDENING. The principles of location, soil management, tillage, fertilizing, and control of diseases and insects will be taken up. This will be followed by a study of special crops. Text, Watts, Ralph L., *Vegetable Gardening*, (The Orange Judd Co., New York, Publishers), Revised 1922 edition. 2 hours' credit.

## POULTRY HUSBANDRY

1e. FARM POULTRY MANAGEMENT. A course for farmers raising poultry. The housing and raising of poultry, handling stock for market, egg production, killing, dressing, treating diseases, hatching and rearing the young and similar topics. Text, Lippincott, Wm. A., *Poultry Production*, (Lea and Febiger, Philadelphia, Publishers), 3rd edition. 1 hour's credit.

## SOILS

1e. SOILS. Prerequisite, approved courses in general chemistry and geology. The physical and chemical properties of soils and their relations to soil management. Texts, Lyon and Buckman, *The Nature and Properties of Soils*, (The Macmillan Co., Publishers), 1922 edition; Mosier and Gustafson, *Soil Physics and Management*, (J. B. Lippincott and Co., Publishers), 1917 edition; Experiment Station bulletins and circulars. 4 hours' credit.

(Candidates for the B. S. in Agriculture, unless excused, will be required on coming to the University, to complete one hour of laboratory work to make up a total of five hours in Soils 1.)

## CHEMISTRY

121. QUANTITATIVE CHEMICAL ANALYSIS. Prerequisite, Qualitative Analysis. This course includes the general principles of gravimetric and volumetric analysis. The work consists of typical determinations supplemented by the working of a considerable number of type problems and exercises. A final written examination over the work will be required. The chemistry department will furnish all the samples and supply such reagents as the student does not have, but the student must have

access to an analytical balance and must refund the cost of any supplies furnished. This course cannot be counted for credit toward the medical requirement. 5 hours' credit.

### CLASSICAL ARCHAEOLOGY

2c. CLASSICAL MYTHOLOGY. The myths as they are represented in literature and in Greek and Roman art. 2 hours' credit.

### ECONOMICS

1. GENERAL ECONOMICS. The fundamental principles of the science and a general survey of the current problems of industry and commerce in which they are involved. Texts, Brown, H. G., *Economic Science and the Common Welfare*, (Missouri Book Co., Columbia, Mo., Publishers), 1926 edition; Williamson, Thos. Ross, *Readings in Economics*, (D. C. Heath and Co., Publishers), 1923 edition. 5 hours' credit.

Students applying for this course must have completed one year of college work if they are to be enrolled as regular students. This requirement may be waived in the case of special students, who are over twenty-one years of age.

17. ELEMENTARY ACCOUNTING. Prerequisite, an approved course in General Economics. The construction and interpretation of the accounts of the private business, the partnership, and the corporation. A study of the use of income statements and balance sheets. Texts, Scott, DR., *The Theory of Accounts*, (Edwards Brothers, Ann Arbor, Michigan, Publishers), 1925 edition; Paton, W. A., *Accounting*, (The Macmillan Co., Publishers), 1922 edition. 3 or 5 hours' credit.

105. MONEY, CREDIT AND BANKING. Prerequisite, an approved course in General Economics. Relation of the production of the precious metals to the banking business, the supply of money and prices of commodities. Organization and operation of the banking business in the leading nations with special reference to its bearings on loan and discount rates and the development of business. Texts, Holdsworth, John Thomas, *Money and Banking*, (D. Appleton and Co., New York, Publishers), 1922 edition; Phillips, Chester Arthur, *Readings in Money and Banking*, (The Macmillan Co., Publishers), 1916 edition. 3 or 5 hours' credit.

### EDUCATION

A102. EDUCATIONAL PSYCHOLOGY. Prerequisite, an approved course in general psychology or its equivalent (see page 27, Instincts and Habits), and at least 45 semester hours of college credit. An introduction to the science of education; application of the methods and results of experimental psychology to the problems of training children. Texts, Gates, A. I., *Psychology for Students of Education*, (The Macmillan Co., Publishers), 1924 edition; Starch, Daniel, *Educational Psychology*, (The Macmillan Co., Publishers), 1924 edition; Carr, H. A., *Psychology—A Study of Mental Activity*, (Longmans, Green and Co., Publishers), 1925 edition. 3 hours' credit.

A205. THE PSYCHOLOGY OF EDUCATION. An advanced course covering the whole field of educational psychology. The course will consist of a study of the systematic and experimental literature in the field of educational psychology. For graduate students who have at least fifteen hours of college credit in education courses. Texts, Thorndike, E. L., *Educational Psychology—Briefer Course*, (Teachers' College, Columbia University, New York, Publishers), any edition; Gates, A. I., *Psychology for Students of Education*, (The Macmillan Co., Publishers), 1924 edition; Watson, J. B., *Psychology from the Standpoint of a Behaviorist*, (J. B. Lippincott and Co., Publishers), 1924 edition; Starch, Daniel, *Educational Psychology*, (The Macmillan

Co., Publishers), 1924 edition; Pyle, W. H., *The Psychology of Learning*, (Warwick and York, Baltimore, Md., Publishers), 1921 edition; Woodworth, R. S., *Psychology—A Study of Mental Life*, (Henry Holt and Co., New York, Publishers), 1925 edition. 3 hours' credit.

A215. RESEARCH IN EDUCATIONAL PSYCHOLOGY. Open only to students who have had considerable training both in general and educational psychology, including training in psychological methods. Original investigation of problems in mental development or in any field of educational psychology. Credit to be arranged.

B125e. HISTORY OF EDUCATION. Intended to give a better understanding and appreciation of present educational practices and tendencies by explaining the historical movements most influential in determining the present educational situation.

Open to students who have had at least one year of college work in addition to the four years' work of a standard secondary school, and to special students, who must be over twenty-one years of age and capable of taking this course. Text, Cubberley, E. P., *The History of Education*, (Houghton-Mifflin Co., Publishers). 3 hours' credit.

B150e. PRINCIPLES OF EDUCATION. Prerequisite, senior standing in college. A study of the nature and function of education, including the fundamental principles which should guide in educational procedure. The principles are interpreted and organized so as to give a philosophy of education consistent with modern life. Text, Coursault, J. H., *The Principles of Education*, (Silver-Burdett Co., Publishers). 3 hours' credit.

C150. HIGH SCHOOL ECONOMY. A first course in secondary education from the standpoint of the teacher in secondary schools. Texts, *Cardinal Principles of Secondary Education*, United States Bureau of Education, Bulletin 1918, No. 35, (5c); Douglass, A. A., *Secondary Education*, (Houghton-Mifflin Co., Chicago, Publishers); Douglass, H. R., *Modern Methods in High School Teaching*, (Houghton-Mifflin Co., Chicago, Publishers); Eikenberry, D. H., *A Study of Missouri High Schools*, Missouri State Department of Education, Bulletin No. 1, 1925; *Organization and Administration of Junior and Senior High Schools*, 1927; Missouri School Laws, 1927; Phillips, F. M., *Statistics of Public High Schools*, 1923-24, United States Bureau of Education, Bulletin 1925, No. 40, (5c); Phillips, F. M., *Statistics of Private High Schools and Academies*, United States Bureau of Education, Bulletin 1925, No. 23, (5c); Phillips, F. M., *Statistics of Public High Schools*, 1921-22, United States Bureau of Education, Bulletin 1924, No. 7, (5c); Phillips, F. M., *Accredited Secondary Schools in the United States*, United States Bureau of Education, Bulletin 1925, No. 11, (15c); McKown, H. C., *The Trend of College Entrance Requirements*, 1913-22, United States Bureau of Education, Bulletin 1924, No. 35, (20c); *University of Missouri Catalog*. For juniors and seniors. 2 hours' credit.

C170e. EDUCATIONAL STATISTICS. The course is intended to assist the teacher and administrator in reading recent educational literature and in solving practical problems. Major topics: function of educational statistics; educational problems requiring statistical treatment; collecting and tabulating data; and other problems. Practice is given in the application of statistical methods to problems found in the Missouri system. Texts, Rugg, Harold O., *Statistical Methods Applied to Education*, (Houghton-Mifflin Co., Publishers), 1917 edition; Alexander, Carter, *School Statistics and Publicity*, (Silver-Burdette Co., Publishers), 1919 edition. 2½ or 3 hours' credit.

C175e. ADMINISTRATION OF EDUCATIONAL TESTS AND MEASUREMENTS. Designed to give the administrator, the supervisor, and the teacher the point of view, the knowledge, and the skill necessary to use tests, scales, and other modern measure-



ments in improving class room instruction in the elementary and secondary schools. Practice will be given in administering, scoring, tabulating, and interpreting results, and in prescribing remedial measurements. It is strongly recommended that students in this course have access to a class or classes to which they can give educational tests. Texts, Wilson and Hoke, *How to Measure*, (The Macmillan Company, New York, Publishers), 1921 edition; Monroe, Walter S., *Measuring the Results of Teaching*, (Houghton-Mifflin Co., New York, Publishers), 1918 edition. Supplementary readings, Monroe, *An Introduction to the Theory of Educational Measurements*, (Houghton-Mifflin Co., New York, Publishers), 1923 edition; McCall, *How to Measure in Education*, (The Macmillan Co., New York, Publishers), 1922 edition. 2½ or 3 hours' credit.

C180e. ADMINISTRATION OF PUBLIC EDUCATION IN THE UNITED STATES. A fundamental course in the principles and practices of national, state, and county educational administration. Texts, Cubberley, E. P., *Public School Administration*, (Houghton-Mifflin Co., New York, Publishers), 1922 edition; Morrison, J. C., *Legal Status of the City Superintendent*, (Warwick and York, Baltimore, Md., Publishers), 1921 edition. The study of a number of bulletins is also required. A list of these will be furnished by the Extension Division with the assignments. 3 hours' credit.

C250. RESEARCH IN EDUCATIONAL ADMINISTRATION. This course will consist of special research problems worked out in the field under the personal direction of the members of the faculty of the School of Education. It will ordinarily be necessary for students doing work of this type to come to the University at least two or three times during the semester for conferences.

D120. ELEMENTARY SCHOOL ORGANIZATION AND MANAGEMENT. A study of the major problems of organization and management from the point of view of teachers in the elementary school. The course will be based in the main on two texts, Strayer and Engelhardt, *The Class Room Teacher*, (American Book Co., New York, Publishers), 1920 edition; Sears, *Classroom Organization and Control*, (Houghton-Mifflin Co., New York, Publishers), 1918 edition. 2 hours' credit.

D170. ELEMENTARY SCHOOL CURRICULUM. A study of the modern elementary school curriculum from the point of view of objectives, methods, and materials with subjects regarding its practical reorganization. Two textbooks are used as a basis for the major features of the course: Bobbitt, *How to Make a Curriculum*, (Houghton-Mifflin Co., Publishers), 1924 edition; Phillips, *Modern Methods and the Elementary Curriculum*, (The Century Co., Publishers), 1923 edition. 2 hours' credit.

D184e. PROJECTS IN MORAL EDUCATION. A rather comprehensive survey of what the home, school, and community can do in a cooperative way has been outlined and much data collected for this course. The philosophy and psychology of education will be stressed in its direct relationship to projects, activities, devices and methods that will be effective in the home, school and community. Parents, ministers, social workers, and teachers have taken this course and profited much from it. Texts, Kilpatrick, *Foundations of Method*, (Macmillan Co., Publishers), 1925 edition; Dewey, *Human Nature and Conduct*, (Henry Holt & Co., Publishers), 1922 edition; Coe, *Law and Freedom in the School*, (University of Chicago Press, Publishers), 1925 edition. 3 hours' credit.

D265e. RESEARCH IN SCHOOL SUPERVISION. Special investigations for advanced students. (Credit to be arranged.)

E101. EDUCATION FOR PARENTS. An introduction to education from the point of view of the parent. The course will consist of a study of such problems as the parents' relation to the school; child psychology; training pre-school children; problems in moral and character education; the problems of the modern school

curriculum; school administration; school finance; and the teacher. 3 hours' credit.

G130e. TEACHING INDUSTRIAL ARTS. Intended for teachers of industrial arts. Texts, Vaughn and Mays, *Content and Methods of Industrial Art*, (The Century Co., Publishers), 1924 edition; Selvidge, *How to Teach a Trade*, (The Manual Arts Press, Peoria, Ill., Publishers), 1923 edition; Bennett, *The Manual Arts*, (The Manual Arts Press, Peoria, Ill., Publishers), 1917 edition; Griffith, *Teaching Manual and Industrial Arts*, (The Manual Arts Press, Peoria, Ill., Publishers), 1920 edition. 2 hours' credit.

H133. TEACHING OF FRENCH. This is a course in methods of teaching French in secondary schools. Prerequisite, 15 hours of French. Texts, Handschin, *Methods of Teaching Modern Languages*, (World Book Co., Publishers), 1923 edition; *The Modern Language Journal*, for the current year, Oct. to May incl., (A. G. Host, Troy High School, Troy, New York, Publishers); Nitze and Wilkins, *A Handbook of French Phonetics*, (Henry Holt and Co., Publishers), 1923 edition; Palmer, H. E., *The Principles of Language Study*, (World Book Co., Yonkers-on-Hudson, New York, Publishers), 1921 edition; Abry-Audic-Crouzet, *Histoire Illustrée de la Littérature Française*, (D. C. Heath and Co., Publishers); Lavissee, *Histoire de France, Cours Moyen*, (D. C. Heath and Co., Publishers); Rambaud, Alfred, *Petite Histoire de la Civilisation Française des origines jusqu'à nos jours*, (Colin Publishing Co., Paris, France), 1921 edition. (This text by Rambaud may be ordered direct from M. Ed. Champion, 5 Quai Malaquais, Paris, or from the University Cooperative Store, Columbia, Mo.) The texts by Host, Palmer and Abry-Audic-Crouzet may be purchased either by the student or by the school library; or, preferably by both. 2 hours' credit.

H101. TEACHING OF ART. Prerequisite, the fundamental courses in Theory and Practice of Art, or their equivalents. Basic ideas and procedures involved in Art education in the elementary grades and junior and senior high schools. 2 hours' senior college credit.

H102e. TEACHING OF ART IN ELEMENTARY SCHOOLS. A general plan for the art work in elementary schools with emphasis on the grade in which the student is most interested. Designed to aid the regular school teacher and not intended for specialists. Credit in junior college only. 1 or 2 hours' credit.

Those applying for 2 hours' credit must have had some training in drawing and design.

H116. TEACHING OF GERMAN. A course intended primarily for the teacher of Modern Languages. A study of principles and methods of present day progressive language teaching. Texts, Handschin, *Methods of Teaching Modern Languages*, (World Book Co., Publishers), 1923 edition; Bagster-Collins, *German in Secondary Schools*, (Columbia University Press, Publishers), 1913 edition. In addition, the following books should be secured: Jespersen, *How to Teach a Modern Language*; Vietor, *Elemente der Phonetik*; Hempl, *German Orthography and Phonology*, (Ginn and Company, Publishers); Sievers, *Die Grundzüge der Phonetik*; Sweet, *A Practical Study of Languages*, (Henry Holt and Co., Publishers). 2 hours' credit.

H121e. THE TEACHING OF THE SOCIAL STUDIES IN THE JUNIOR HIGH SCHOOL. Prerequisites, senior or graduate standing with at least 10 hours of history and 10 hours of allied subjects—sociology, political science, or economics—and in education, Educational Psychology and Technique of Teaching, or their equivalents. This course has for its aim a development of the purposes and technique of teaching the social studies in the junior high school grades. It is divided into Parts I and II. Part I is the same as Part I of the course H122e. If the student has taken the course H122e, he will receive only 1½ hours' credit for this course and will not be required

to do Part I. Books required: Dawson, *Teaching of the Social Studies*, (Macmillan Co., Chicago, Publishers), 1927; Knowlton, *History and the Other Social Studies in the Junior High School*, (Scribners, Chicago, Publishers), 1926; Tryon, *The Teaching of History in Junior and Senior High Schools*, (Ginn and Co., Chicago, Publishers), 1921; Barnes, *History and the Prospects of the Social Sciences*, (Alfred S. Knopf, New York, Publishers), 1925; Missouri Social Studies Bulletin, (State Department of Education, Jefferson City), 1928; Fifth Year Book, (Department of Superintendents of the N. E. A., Washington, D. C.), 1927; Historical Outlook, (McKinley Publishing Co., Philadelphia), recent numbers. 2 hours' credit.

H122e. THE TEACHING OF THE SOCIAL STUDIES IN THE SENIOR HIGH SCHOOL. To be available January 1, 1928. Prerequisites, senior or graduate standing with at least 10 hours of history and 10 hours of allied subjects—sociology, political science, or economics—and in education, Educational Psychology and Technique of Teaching, or their equivalents. This course has for its aim a development of the purposes and technique of teaching the social studies in the senior high school grades. It is divided into Parts I and II. Part I is the same as Part I of the course H121e. If the student has taken the course H121e, he will receive only 1½ hours' credit for this course and will not be required to do Part I. Books required: Dawson, *Teaching the Social Studies*, (Macmillan Co., Chicago, Publishers), 1927; Barnes, *History and the Prospects of the Social Sciences*, (Alfred S. Knopf, New York, Publishers), 1925; Barnes, *The New History and the Social Studies*, (The Century Co., Chicago, Publishers), 1925; Tryon, *The Teaching of History in Junior and Senior High Schools*, (Ginn & Co., Chicago, Publishers), 1921; Missouri Social Studies Bulletin, (State Department of Education, Jefferson City), 1928; Fifth Year Book, (Department of Superintendents of the N. E. A., Washington, D. C.), 1927; Historical Outlook, (McKinley Publishing Co., Philadelphia), recent numbers. 2 hours' credit.

H128. THE TEACHING OF MATHEMATICS IN SECONDARY SCHOOLS. This course contemplates a careful and critical study of methods and technique involved in the teaching of mathematics to high school students. The subject is developed separately in connection with each of the branches of mathematics ordinarily taught in high schools. A detailed study is made of the problems peculiar to the teaching of these various branches. Texts, Schultze, Arthur, *The Teaching of Mathematics in Secondary Schools*, (The Macmillan Co., Publishers), 1923 edition; Edgerton and Carpenter, *First Course in Algebra*, (Allyn and Bacon, Publishers), 1923 edition; Palmer, Taylor, and Farnum, *Plane Geometry*, (Scott, Foresman Co., Publishers), 1924 edition; U. S. Bureau of Education Bulletin, 1921, No. 32, (Superintendent of Documents, Washington, D. C.); Breslich, E. R., *The Development of a Curriculum in Correlated Mathematics, and a Discussion of Aims, Values, and Results*, (The University of Chicago Press, Publishers), 1921 edition. 2 hours' credit.

## ENGLISH

Courses 1 and 2, or 6 hours of college composition, should be taken before courses 3e or 4e.

1. COMPOSITION AND RHETORIC. Detailed study and practice in construction and composition. This course, or its equivalent, should precede other courses in English. Texts, Woolley, E. C., *Handbook of Composition*, (D. C. Heath and Co., Publishers), 1919 edition, revised; Baldwin, Charles S., *Composition: Oral and Written*, (Longmans, Green and Co., New York, Publishers), 1918 edition; Canby, H. S., and Pierce, F. E., *Selections from Robert Louis Stevenson*, (Charles Scribner's Sons, New York, Publishers), 1911 edition; Carpenter and Brewster, *Modern English Prose*, (The Macmillan Co., Chicago, Publishers), 1918 edition; Rankin, J. W., *A*

*Review of Grammar and Punctuation*, (The Missouri Book Co., Columbia, Mo., Publishers), 1925 edition. 3 hours' credit.

2. COMPOSITION AND RHETORIC. A continuation of course 1. Additional readings and themes will be required. Texts, Fulton, M. G., *Expository Writing*, (The Macmillan Co., New York, Publishers), 1912 edition; Palgrave, *The Golden Treasury*, with Additional Poems, (Oxford University Press, New York Publishers), 1920 edition. 3 hours' credit.

3e. ENGLISH LITERATURE. General view. First half: Chaucer through Milton. Texts, Cunliffe, Pyre and Young, *Century Readings in English Literature*, (The Century Co., New York, Publishers), 1921 or later editions; Pyre, *Student's Handbook in English Literature*, (The Century Co., New York, Publishers), 1921 edition; Fulton, Bressler, and Mullin, *Questions on Readings in English Literature*, (The Century Company, New York, Publishers), 1923 edition. The student should also possess or have access to a good handbook of English Literature, preferably that of Moody and Lovett. 3 hours' credit.

4e. ENGLISH LITERATURE. General view. Second half: Dryden to the present. Texts, Cunliffe, Pyre and Young, *Century Readings in English Literature*, (The Century Co., New York, Publishers), 1921 or later editions; Pyre, *Student's Handbook in English Literature*, (The Century Co., New York, Publishers), 1921 edition; Fulton, Bressler, and Mullin, *Questions on Readings in English Literature*, (The Century Co., New York, Publishers), 1923 edition. The student should also possess or have access to a good handbook of English Literature, preferably that of Moody and Lovett. 3 hours' credit.

50. NARRATION AND DESCRIPTION. A course in short story writing. Prerequisites, courses 1, 2, 3e, 4e, or their equivalents. In place of the formal prerequisites, the student may submit written or published work he has done. This course requires the writing and rewriting of original short stories, together with the reading and analysis of a considerable number of well-known stories. It aims to develop the student's story-writing talent and to train his appreciation of good stories. Texts, Ramsay, R. L., *Short Stories of America*, (Houghton-Mifflin Co., Publishers), 1921 edition; Law, F. H., *Modern Short Stories*, (The Century Co., Publishers), 1919 edition; Williams, Blanche Colton, *A Handbook on Story Writing*, (Dodd, Mead and Co., Publishers), 1924 edition. 3 hours' credit.

175 and 176. AMERICAN LITERATURE. (a) Sectional development; (b) growth of nationality; (c) present tendencies. The leading writers in prose and verse are considered both for their intrinsic worth and as illustrative of national development. The work is divided into two parts, chronologically, the first (175) ending with Hawthorne, the second (176) beginning with Emerson and the Transcendentalists. The best results will be secured by taking both parts, in chronological order; but either part may be taken separately. Credit for each, 3 hours.

English 1, 2, 3e, 4e, or their equivalents, are prerequisites for these courses.

The required textbooks for both courses are: Bronson, Walter Cochrane, *A Short History of American Literature*, (D. C. Heath and Co., Boston, Mass., Publishers), 1919 edition; Page, Curtis Hidden, *Chief American Poets*, (Houghton-Mifflin Co., Publishers, New York and Boston), 1905 edition. Students should also possess or have access to the following (for both courses): Stedman, Edmund Clarence, *American Anthology*, (Houghton-Mifflin Co., Publishers, New York and Boston), 1900 edition; the biographies in the American Men of Letters series, (Houghton-Mifflin Co., Publishers), any edition; Trent (editor), *The Cambridge History of American Literature*, (J. G. Putnam's Sons, New York, Publishers), 1917 ff. editions; (for 175) Tyler, *History of American Literature, 1607-1765*, (G. P. Putnam's Sons,

Publishers), 1897 edition, or Trent and Wells, *Colonial Prose and Poetry*, (Crowell and Co., Publishers), 1901 edition; Franklin, the *Autobiography*, (Everyman's Library, Dutton or Harcourt, Publisher); Paine, the volume of selections in the Modern Library, edited by Van Doren; *The Federalist*, (a good edition in Everyman's Library); Ellis, *Joseph Dennie and His Circle* (Bulletin of the University of Texas, No. 40); Brown, C. B., *Wieland*, (Harcourt, Publisher); the works of Irving, Cooper, Melville, Poe, Hawthorne; (for 176) Pattee, *American Literature since 1870*, (The Century Co., Publishers), 1915 edition; the works of Emerson, Thoreau, Longfellow, Holmes, Lowell, Bayard Taylor, Whitman, Harte, Riley, Mark Twain, Howells, Henry James, T. N. Page, Cable, Joel Chandler Harris, Miss Murfree ("Charles Egbert Craddock"), James Lane Allen, William Vaughan Moody, Paul Elmer More, and Adams, H., *The Education of Henry Adams*, (Houghton-Mifflin Co., Publishers), 1918 edition.

## FRENCH

1. **ELEMENTARY COURSE.** Given only when satisfactory arrangements for acquiring the pronunciation can be made with the instructor in charge of the course. Texts, Chardenal, *Complete French Course*, (Allyn and Bacon Co., Chicago, Publishers), Brooks, revised edition of 1917; Nitze and Wilkins, *A Handbook of French Phonetics*, (Henry Holt and Co., Publishers), 1923 edition; Labiche et Martin, *Le Voyage de M. Perrichon*, (Heath, Holt, etc., Publishers), any edition. 5 hours' credit.

2. **INTERMEDIATE COURSE.** A second-year course in French open only to those who can furnish satisfactory evidence of possessing a good pronunciation, a knowledge of the essentials of grammar, the ability to express themselves correctly in simple French, and a vocabulary and knowledge of construction sufficient for reading French prose of moderate difficulty. Texts, Fraser and Squair, *French Grammar*, (D. C. Heath and Co., Publishers), 1921 edition; Halevy, *L'Abbé Constantin*, (D. C. Heath and Co., Publishers), 1916 edition; Merimée, *Carmen and Other Stories*, (Ginn and Co., Publishers), 1919 edition; Pailleron, *Le Monde où l'on s'ennuie*, (D. C. Heath and Co., Publishers), Revised edition; Augier and Sandeau, *Le Gendre de M. Poirier*, (D. C. Heath and Co., Publishers), 1896 edition; Nitze and Wilkins, *A Handbook of French Phonetics*, (Henry Holt and Co., Publishers), 1923 edition. 5 hours' credit.

3. **ADVANCED COURSE.** Prerequisite, courses 1 and 2, or their equivalents. Texts, Hugo, *Les Misérables*, (D. C. Heath and Co., Publishers), 1903 edition; Comfort, *French Prose Composition*, (D. C. Heath and Co., Publishers), 1907 edition. For the last part of the course also Buffum, *French Short Stories*, (D. C. Heath and Co., Publishers), 1926 edition. 3 or 5 hours' credit.

108. **MASTERPIECES OF FRENCH LITERATURE.** Prerequisite, three semesters' college or university work in French. A general study of the various periods together with the reading of selected works from each period and critical works and reports. Relation of French literature to other European literatures. Texts, Wright, *History of French Literature*, (Oxford University Press, New York, Publishers), latest edition; or Lanson, *Histoire de la Littérature Française*, (Hachette and Co., Paris, France, Publishers), 1924 edition. 3 hours' credit.

## GEOGRAPHY

6. **PRINCIPLES OF GEOGRAPHY.** This course primarily is concerned with the conditions of the physical environment, and ways in which such conditions have a bearing upon activities of people. Materials needed are: Text, Jones and Whittlesey,

*Principles of Economic Geography*, Part I, The Physical Environment, (University of Chicago Press, Publishers); Atlas, Philips School Atlas, (D. Appleton and Co., New York, Publishers); Topographic Maps, to be supplied by Extension Division and to be returned when the course is completed. 3 hours' credit.

## GERMAN

2. GERMAN READING, SYNTAX AND COMPOSITION. Prerequisite, an approved course in Beginning German. Reading from authors like Storm, Hauff, Baumbach, Freytag; drill in grammar. Study of the German idiom. Intensive composition work. Leads to German theme-writing. Texts, Vos, *Essentials of German*, (Henry Holt and Co., Publishers), 1914 edition; Salomon, *Geschichte einer Geige*, (D. C. Heath and Co., Publishers), 1911 edition; Rosegger, *Der Lex von Gutenhag*, (D. C. Heath and Co., Publishers), 1911 edition; Wildenbruch, *Kindertränen*, (Henry Holt and Co., Publishers), 1911 edition; Baumbach, *Der Schwiegersohn*, (Ginn and Co., Publishers), 1909 edition. 3 or 5 hours' credit.

The texts by Vos, Salomon, and Rosegger are used for the first three hours of the course; those by Vos, Wildenbruch, and Baumbach for the last two hours.

3. ADVANCED READING COURSE. Prerequisite, course 2. Primarily a course in extensive reading of more difficult German prose; language-drill of course 2 continued; German essays. Texts, for first three hours, Nichols, *Modern German Prose*, (Henry Holt and Co., Publishers), 1910 edition; a German grammar such as Prokosch, *Introduction to German*, (Henry Holt and Co., Publishers), 1911 edition; for the last two hours, Whitney and Stroebe, *Advanced German Composition*, (Henry Holt and Co., Publishers), 1913 edition; Aus Nah und Fern, current number, (F. W. Parker, School Press, Chicago, Ill., Publisher); one of the following grammars: Bierwirth, *Elements of German*, (Henry Holt and Co., New York, Publishers), 1900 edition; Joynes-Meissner, *A German Grammar*, (D. C. Heath and Co., Boston, Mass., Publishers), 1887 edition; Thomas, *A Practical German Grammar*, (Henry Holt and Co., New York, Publishers), 1895 edition; Whitney, *German Grammar*, (Henry Holt and Co., New York, Publishers), 1893 edition. 3 or 5 hours' credit.

104. MASTERPIECES IN MODERN GERMAN DRAMA, LYRICS AND NOVELS. Intensive study, from the literary and cultural side, of a number of carefully chosen modern German dramas, lyric poems and novels. Texts, Hebbel, *Herodes and Marianne*, (Henry Holt and Co., Publishers), 1905 edition; Ludwig, *Der Erbförster*, (Henry Holt and Co., Publishers), 1910 edition; Von Klense, *Deutsche Gedichte*, (Henry Holt and Co., Publishers), 1895 edition; Ludwig, *Zwischen Himmel und Erde*, (D. C. Heath and Co., Publishers), 1903 edition; Meyer, *Der Heibige*, (Henry Holt and Co., Publishers), 1900 edition; Woodbridge, *The Drama*, (Allyn and Bacon, Publishers), 1898 edition. 3 hours' credit.

109. OUTLINE COURSE IN HISTORICAL GRAMMAR. This course, together with course 105, is arranged to meet the needs of the prospective teacher of German. Though a knowledge of the older periods is desirable, it is not required. Texts, Behaghel, *Die Deutsche Sprache*, (G. E. Stechert, New York, Publisher), 1911 edition; Viotor, *Aussprache des Schriftdeutschen*, (O. R. Reiland, Leipzig, Publisher), 1890 edition. 3 hours' credit.

111. GERMAN DRAMA OF THE NINETEENTH CENTURY. An outline course in modern German political, social, and cultural movements, reflected in certain typical dramatists of the period. Texts, Witkowski, *Das Deutsche Drama des Neunzehnten Jahrhunderts*, (G. E. Stechert, New York, Publisher), edited by B. G. Teubner, 1904 edition; Coar, *Studies in German Literature in the Nineteenth Century*, (The Macmillan Co., Publishers), 1903 edition; Henderson, *A Short History of Germany*,

two volumes, (The Macmillan Co., Publishers), 1920 edition, or any good history of Germany in the nineteenth century; and several inexpensive drama-texts. 2 or 3 hours' credit.

214. MIDDLE HIGH GERMAN. Hartmann von Aue. For advanced seniors. Reading, translation of medieval idiom into modern. Elements of Middle High German grammar. Texts, Wackernagel, W., *Der Arme Heinrich Herrn Hartmanns von Aue*, (G. E. Stechert, New York, Publisher), 1911 edition; Paul, H., *Mittelhochdeutsches Grammatik*, (G. E. Stechert, New York Publisher), 1908 edition; Lexer, M., *Mittelhochdeutsches Taschenwörterbuch*, (G. E. Stechert, New York, Publisher), 1911 edition. 3 hours' credit.

Later editions of the text can also be used.

## HISTORY

1e. EARLY EUROPEAN HISTORY. This course or course 6e can be taken as an introductory course. This course deals with the history of Europe during the ancient and medieval periods to 1500 A. D. Recommended for all students who wish to take other courses in history or political science. Texts, Rostovtzeff, *A History of the Ancient World*, 2 volumes, (Oxford University Press, New York, Publishers), 1926; Thorndike, *The History of Medieval Europe*, (Houghton-Mifflin Co., Chicago, Publishers), 1917. The two volumes by Rostovtzeff are used for the first 2½ hours; the text by Thorndike is used for the last 2½ hours. 2½ or 5 hours' credit.

6e. LATER EUROPEAN HISTORY. This course or course 1e can be taken as an introductory course. The political, social, economic and institutional history of the chief European countries and their expansion since 1500 carefully studied with a view to conditions leading up to the great war. Texts, Hayes, *A Political and Social History of Modern Europe*, Volume I, (The Macmillan Co., Chicago, Publishers), 1925 edition; Hayes, *A Political and Social History of Modern Europe*, Volume II, (The Macmillan Co., Chicago, Publishers), 1924 revised edition. 5 hours' credit.

8e. AMERICAN HISTORY. Prerequisite, 24 hours' total college credit including 1e or 6e, or an equivalent of one of these courses. A general course on the history of the United States with special emphasis on the period since 1760. Instruction based on the textbooks and assigned readings. Texts, Harlow, *The Growth of the United States*, (Henry Holt and Co., New York, Publishers), 1925; Faulkner, *American Economic History*, (Harper and Brothers, New York, Publishers), 1924; Macdonald, *Documentary Source Book of American History*, (The Macmillan Co., Chicago, Publishers), 1926. 2½ or 5 hours' credit.

117e. ENGLISH HISTORY. Prerequisites, 40 hours' college credit including 5 hours of history. A general course dealing with the political, social, and institutional development of the English people from the earliest times to the present. Texts, Larson, *History of England and the British Commonwealth*, (Henry Holt and Co., New York, Publishers), 1924; Cheyney, *Readings in English History*, (Ginn and Co., Chicago, Publishers), new edition. 2½ or 5 hours' credit.

The following courses may, with the consent of the major adviser, be taken for graduate credit.

155e. THE RENAISSANCE. A survey of the cultural development of Europe from 1300 to 1600. Texts, E. M. Hulme, *The Renaissance, the Protestant Revolution, and the Catholic Reformation*, (The Century Co., New York, Publishers), 1915 edition; Taylor, H. O., *Thought and Expression in the Sixteenth Century*, 2 volumes, (The Macmillan Co., Publishers), 1920 edition. In addition, students must purchase or have free access to Machiavelli, *The Prince*, (Dutton and Co., New York, Publishers); *The Memoirs of Benvenuto Cellini*, (Dutton and Co., Publishers). Graduate students

should also read Erasmus, *In Praise of Folly*, and More, Sir Thomas, *Utopia*. 3 hours' credit.

160e. THE FRENCH REVOLUTION. Prerequisite, graduate standing. Undergraduates may take this course with special permission. Texts, Bourne, H. E., *The Revolutionary Period in Europe*, (The Century Co., Publishers), 1914 edition; Madelin, L., *The French Revolution*, (G. P. Putnam's Sons, New York, Publishers), 1925 edition; Fisher, H. L., *Bonapartism*, (The Oxford University Press, New York, Publishers), 1907 edition. Suggested readings, Lowell, E. J., *The Eve of the French Revolution*, (Houghton-Mifflin Co., Publishers), 1892 edition; Webster, C. K., *The Congress of Vienna*, (The Oxford University Press, New York, Publishers), 1918 edition. 2 hours' credit.

190e. AMERICAN DIPLOMATIC HISTORY. A survey of the foreign relations of the United States, with special emphasis on the period since the Civil War. Texts, Fish, C. R., *American Diplomacy*, (Henry Holt and Co., New York, Publishers), 1923; Adams, R. G., *History of the Foreign Policy of the United States*, (The Macmillan Co., Chicago, Publishers), 1924; Hill, Charles E., *Leading American Treaties*, (The Macmillan Co., Chicago, Publishers), 1922. In addition the student must purchase or have free access to the following books: Moore, J. B., *American Diplomacy*, (Harper and Brothers, New York, Publishers), 1905; Matthews, J. M., *The Conduct of American Foreign Relations*, (The Century Co., New York, Publishers); Maloy, *Treaties and Conventions of the United States*. 3 hours' credit.

## HOME ECONOMICS

1e. FOODS AND NUTRITION. A course planned to give the student a comprehensive knowledge of the principles underlying the selection and preparation of food. Laboratory outlines of work to be done at home or in any available kitchen are sent out. The result of cooking experiments must be carefully noted, conclusions drawn, and the whole sent in for correction. Material is sent out from time to time to explain any difficulties involved. It will be necessary for students to buy a thermometer and some other laboratory supplies. The cost will probably be about \$5. Text, Sherman, *Food Products*, (The Macmillan Co., Publishers), 1924 revised edition; Rose, *Feeding the Family*, (The Macmillan Co., Publishers), 1924 revised edition. 2 or 3 hours' credit.

10. HOUSEHOLD PROBLEMS. General insight into the field of home economics through a study of the problems of the modern home. Texts, Rose, *Feeding the Family*; Donham, *Spending the Family Income*; Woolman, *Clothing, Choice, Care, Cost*; Andrews, *Economics of the Household*; Bevier, *Home Economics in Education*; Abel, *Successful Family Life*; Broadhurst, *Home and Community Hygiene*. The first three books may be borrowed from the Extension Division upon the payment of a rental fee. 2 hours' credit.

101. HOUSEHOLD SANITATION. Prerequisites, physiology and bacteriology or physiology and preventive medicine. A study of some of the factors which affect the health of the family, including the location and the construction of the house, housekeeping problems and some aspects of community hygiene. Texts, Egbert, *Hygiene and Sanitation*, (Lea J. Febiger, New York, Publishers), 8th edition; Broadhurst, *Home and Community Hygiene* (Lippincott Co., Philadelphia, Publishers), 1918 edition. 3 hours' credit.

110e. HOME PLANNING AND FURNISHING. Prerequisite, a course in design. A study of the planning and furnishing of a house from a standpoint of convenience, economics, health and art. Texts, Gray, *House and Home*, (J. B. Lippincott and Co., Publishers), 1923 edition; Rolfe, *Interior Decoration for the Small House*, (The



Macmillan Co., Publishers), 1924 edition; Jakway, *Principles of Interior Decoration*, (The Macmillan Co., Publishers), 1924 edition. 2 hours' credit.

### LATIN

BEGINNERS' LATIN. Texts, Roberts and Rolfe, *Essential Latin Lessons*, (Charles Scribner's Sons, New York, Publishers), 1911 edition; Greenough, D'Ooge and Daniell, *Second Year Latin*, (Ginn and Co., Chicago, Publishers), 1899 edition. 1 unit's credit.

CAESAR'S GALLIC WAR. Texts, Greenough, D'Ooge and Daniell, *Second Year Latin*, (Ginn and Co., Chicago, Publishers), 1899 edition; Harkness, *Complete Latin Grammar*, (American Book Co., Chicago, Publishers), 1908 edition. 1 unit's credit.

Beginners' Latin and Caesar's Gallic War are high school courses, and are offered only for high school credit.

30. CICERO'S ESSAYS ON FRIENDSHIP AND OLD AGE. Open to students who have successfully completed the regular preparatory work in Caesar and Cicero. Texts, *De Senectute and De Amicitia*, (Benj. H. Sanborn Co., Boston, Publishers), 1915 revised edition, edited by C. E. Bennett; Harkness, *Complete Latin Grammar*, (American Book Co., Chicago, Publishers), 1908 edition; Lewis, *Latin Dictionary for Schools*, (American Book Co., Chicago, Publishers). 5 hours' credit.

50e. LATIN PROSE COMPOSITION. Texts, Harkness, *Complete Latin Grammar*, (American Book Co., Chicago, Publishers), 1908 edition; Lewis, *Latin Dictionary for Schools*, (American Book Co., Chicago, Publishers); Nutting, H. C., *Supplementary Latin Composition*, (Allyn and Bacon Co., Chicago, Publishers), 1905 edition. 2 hours' credit.

101e. LATIN PROSE COMPOSITION. Advanced Course. Open only to students who have completed course 50e or its equivalent, either in residence or by correspondence. Texts, Harkness, *Complete Latin Grammar*, (American Book Co., Chicago, Publishers), 1908 edition; Nutting, *Advanced Latin Composition*, (Allyn and Bacon, Chicago, Publishers), 1904 edition; Lewis, *Latin Dictionary for Schools*, (American Book Co., Chicago, Publishers). 2 hours' credit.

130e. THE LETTERS OF PLINY. Open to students who have completed course 30 or its equivalent. Translation of about a hundred of the epistles and reports on Roman life of the time of Trajan. Texts, Merrill, *Selected Letters of Pliny*, (The Macmillan Co., Publishers), 1914 edition; Harkness, *Complete Latin Grammar*, (American Book Co., Publishers), 1908 edition; Lewis, *Latin Dictionary for Schools*, (American Book Co., Publishers). 3 hours' credit.

210e. ROMAN LITERATURE STUDIED THROUGH SELECTIONS FROM LATIN. Previous graduate work a prerequisite. 3 hours' credit.

### MATHEMATICS

(No credit will be given in mathematics for a course which is a prerequisite for courses in which the student has already received credit.)

2e. COLLEGE ALGEBRA. Prerequisite, 1 unit in algebra for entrance. A review of elementary algebra followed by more advanced topics. Text, Buchanan and Emmons, *Advanced Algebra*, (Houghton-Mifflin Co., Publishers), 1925 edition. A grade of "M" or above in this course is a prerequisite for further work in mathematics. 3 hours' credit.

3e. TRIGONOMETRY. Prerequisite, same as for course 2e. An elementary course including the solution of plane and spherical triangles and other applications. Text, Kenyon-Ingold, *Plane and Spherical Trigonometry With Complete Tables*, (The Macmillan Co., Publishers), 1913 edition. 3 hours' credit.

4. ANALYTIC GEOMETRY. Prerequisite, courses 2c and 3c, of which it is the natural continuation. Plane and solid analytic geometry. Text, Smith and Gale, *New Analytic Geometry*, (Ginn and Co., Publishers), 1912 edition. 5 hours' credit.

5. DIFFERENTIAL CALCULUS. Prerequisite, course 4, or any regular course in analytic geometry. An introduction to the methods of the calculus, including simple applications to problems in geometry and mechanics. Text, March and Wolff, *Calculus*, (McGraw Hill, Publishers), 1926 edition. 5 hours' credit.

105. ADVANCED ALGEBRA. Prerequisite, graduate standing and the equivalent of an undergraduate major in mathematics. This course includes determinants, theory of equations, and applications of algebra to geometry. Text, Dickson, Leonard Eugene, *First Course in the Theory of Equations*, (John Wiley and Sons, New York Publishers), 1922 edition. 3 hours' credit.

106. INTEGRAL CALCULUS. Prerequisite, course 5, or its equivalent. A continuation of course 5, including further applications to geometry, mechanics and physics. Text, Davis and Brenke, *The Calculus*, (The Macmillan Co., Publishers), 1922 edition. 5 hours' credit.

120. DIFFERENTIAL EQUATIONS AND THEIR APPLICATIONS. Prerequisite, graduate standing and the equivalent of an undergraduate major in mathematics, including Mathematics 106. This course will treat of the solutions of the simpler differential equations with applications to problems in geometry and in physics. Text, Phillips, *Differential Equations*, (John Wiley and Sons, New York, Publishers), Revised 1924 edition. 3 hours' credit.

## PHYSICS

(Correspondence courses in physics cannot be counted toward the medical requirement.)

7e. GENERAL PHYSICS. Open to those who have had the equivalent of course 1 (see University catalog), or have taught physics in a high school complying with college entrance requirements. Covers the entire range of general physics. A knowledge of elementary trigonometry is essential. The course is based on *A Text-Book of Physics* by Duff and others, (P. Blakiston's Son and Co., Philadelphia, Publishers), 1926 edition. 4 hours' credit.

40e. HISTORY OF PHYSICS. Open to those who have had the equivalent of the first college course in physics, or have taught physics in a high school. Text, Cajori, *A History of Physics in its Elementary Branches*, (The Macmillan Co., Publishers), 1899 edition. 2 hours' credit.

112e. HEAT. Prerequisite, General Physics. This course is largely descriptive, but contains some theoretical work in which an elementary knowledge of calculus is desirable, though not essential. The text includes some thermodynamics, a subject which has become one of the fundamental branches of physics. All teachers of high school physics should plan to take work of this grade in heat, mechanics, electricity and magnetism. Text, Edser, *Heat for Advanced Students*, (The Macmillan Co., Publishers), 1899 edition. 3 hours' credit.

## PHYSICAL EDUCATION

120e. ORGANIZATION OF PHYSICAL EDUCATION. Prerequisites, some practical work in Physical Education or some teaching experience approved by the supervisor.

This course is planned for the administrator or teacher of Physical Education, and deals with the following subjects: Curriculum and policies; finances, equipment and care of the plant; organization and administration of activities. Texts, Williams, Jesse F., *The Organization and Administration of Physical Education*, (The Macmillan Co., Publishers), 1923 edition; Wayman, Agnes, *Education Through Physical Education*, (Lea and Febiger, Philadelphia, Pa., Publishers), 1925 edition. 3 hours' credit.

### PHYSIOLOGY

2. ELEMENTARY VERTEBRATE PHYSIOLOGY. The presentation of the principles of human physiology with application to personal hygiene. Considerable laboratory work is required. Text, Kirke, *Handbook of Physiology*, (William Wood and Co., New York, Publishers), 10th edition. (This course will not count toward the medical requirement.) 5 hours' credit.

### POLITICAL SCIENCE

1e. AMERICAN GOVERNMENT. This course deals with the organization and activities of the American Government, national, state, and local. It, or its equivalent, is a prerequisite for all other courses in political science and public law. Texts, Beard, *American Government and Politics*, (The Macmillan Co., Publishers), 1924 edition. Additional readings, Beard, *Readings in American Government and Politics*, (The Macmillan Co., Publishers), 1924 edition; Bryce, *American Commonwealth*, Volumes 1 and 2, (The Macmillan Co., Publishers), 1914 edition.

Sophomore standing is required. Seniors will receive 2 or 4 hours' credit. The first half of the course deals with the national government and the second half with state and local government. 2½ or 5 hours' credit.

220. SEMINARY. This course offers opportunity for research work in political science. It is given only to advanced students by special arrangement. Previous work in residence at the University is a prerequisite. Credit to be arranged.

### PREVENTIVE MEDICINE

1. PREVENTIVE MEDICINE. This course aims to treat in a rather popular way the general principles of public and personal hygiene and the application of preventive measures against disease. It will satisfy the requirement of hygiene in the School of Education. No credit is allowed toward the medical degree. Texts, Hough and Sedgewick, *The Human Mechanism*, (Ginn and Co., Publishers), 1918 edition; Boyd, *Preventive Medicine*, (W. B. Saunders and Co., Philadelphia, Pa., Publishers), 2nd edition. 2 hours' credit.

101e. GENERAL HYGIENE. Prerequisite, course 1. This course has been especially designed for the benefit of the teachers of the State of Missouri, but must be preceded by course 1 in Preventive Medicine, which can also be taken by teachers. It emphasizes physical inspection and school hygiene. The national government as well as the government of many of our states, has shown a great interest in the physical fitness of the growing population. In order to meet the demands which have come about through these laws, especially through recent legislation in the State of Missouri, this course is offered to assist teachers to meet the requirements of the new laws which are being put into active operation. In the main, it corresponds to the course in General Hygiene as given in the University, but adaptations have been made to meet the needs of teachers, as indicated above. Texts, Williams, Jesse F., *Personal Hygiene Applied*, (W. B. Saunders Co., Publishers), 1925 edition; Turner, Claire E., *Personal and Community Health*, (C. V. Mosby Co., St. Louis, Mo., Publishers), 1st edition. 2 hours' credit.

## PSYCHOLOGY

1. **INSTINCTS AND HABITS.** A Beginner's Course in General Psychology. All psychological study nowadays seeks its justification in psychological work to be done in any of the numerous phases of social activity such as teaching, educational administration, social welfare, industrial employment, legal or medical practice, or vocational guidance. All this work is, or should be, based on an understanding of human beings as possessing an heredity of instincts and as being capable of acquiring habits. This course will introduce the student into such an understanding, leaving all metaphysical issues alone and treating human life from the biological point of view. Texts, Meyer, M. F., *Psychology of the Other One*, Revised 1922 edition, and *A Brief Manual of Psychology Demonstrations*, (The Missouri Book Co., Columbia, Mo., Publishers); Hunter, W. S., *General Psychology*, (The University of Chicago Press, Publishers), Revised 1923 edition. 3 hours' credit.

## RURAL SOCIOLOGY

115. **RURAL SOCIOLOGY.** An intensive study of the conditions, needs and methods of improvement of rural communities. Particular attention is given to such social institutions and organizations as the rural school, the rural church, the rural home, and other community organizations and co-operative enterprises. The subject-matter is organized on the basis of the problem method of teaching. The work in this course should be done in close contact with some rural community. Texts, Gillette, *Rural Sociology*, (The Macmillan Co., Publishers), 1924 edition. Recommended texts, Ellwood, *Sociology and Modern Social Problems*, (American Book Co., Chicago, Publishers), 1924 edition; Ellwood, *The Psychology of Human Society*, (D. Appleton and Co., New York, Publishers), 1925 edition. 3 hours' credit.

(Students who have received one hour's credit for course 15e will be permitted to receive only two hours' credit for this course.)

240. **RESEARCH IN RURAL SOCIAL PROBLEMS.** Investigation of rural social problems and community organization. Open to advanced students by permission only. Credit to be arranged.

## SOCIOLOGY

No course in Sociology is open to students who have had less than one year of college work. General Sociology or its equivalent is a prerequisite for all other courses.

1e. **GENERAL SOCIOLOGY.** An introduction to the study of social problems. This course consists largely of the study of a number of modern social problems such as the problems of divorce, poverty, crime, and other similar problems. It concludes with a consideration of the larger problems of social reconstruction. Texts, Ellwood, *Sociology and Modern Social Problems*, (The Macmillan Co., Publishers), 1924 edition; Ellwood, *The Social Problem*, (The Macmillan Co., Publishers), 1916 edition. 3 hours' credit.

110e. **SOCIAL PATHOLOGY.** This course is a study of the origin, nature, and treatment of the dependent and defective classes, of the causes of poverty, and of remedial and preventive agencies. Texts, Queen and Mann, *Social Pathology*, (The Crowell Co., Publishers), 1925 edition; Gillin, *Poverty and Dependency*, (The Century Co., Publishers), 1921 edition. 2 hours' credit.

111. **CRIMINOLOGY.** This course deals with a study of the nature and causes of crime, the relation of physical and mental defectiveness and untoward influences in the home and neighborhood to crime; the development of criminology theory and procedure, emphasizing penal and reform methods, and especially modern methods of social treatment and prevention of crime. Texts, Sutherland, *Criminology*, (J. B.

Lippincott and Co., Publishers), 1924 edition; Van Waters, *Youth in Conflict*, (The Republic Co., Publishers), 1924 edition. 3 hours' credit.

112. CHILD WELFARE. The following subjects are treated: Heredity and environment as social factors; infant conservation, welfare responsibilities of the school, emphasizing the physical and mental well-being of the child, play, and compulsory and industrial education; child labor, diagnosis and treatment of delinquency; care of the dependent and neglected child; child-caring agencies, public and private; and a community program of child welfare. Texts, Mangold, *Problems of Child Welfare*, (The Macmillan Co., Publishers), 1924 edition; O'Shea (Editor), *The Child: His Nature and His Needs*, (Children's Foundation, Valparaiso, Ind., Publishers), 1924 edition. 3 hours' credit.

114. THE FAMILY. A sociological interpretation of the family as a natural and institutional group, stressing especially the conditions and influences which have changed the forms and functions of family life. Special attention will be given to contemporary family disorganization, including the theories and ideals regarding the re-organization and future of the family. Texts, Goodsell, *The Family as a Social and Educational Institution*, (The Macmillan Co., Publishers), 1924 edition; Spencer, *The Family and Its Members*, (J. B. Lippincott and Co., Publishers), 1924 edition. 2 hours' credit.

116. URBAN SOCIOLOGY. A study of the social conditions in urban communities. This course includes a survey of the history and growth of towns and cities and an intensive study of city planning, civic art, health and sanitation, parks and playgrounds, institutional churches and settlements, markets, transportation and communication facilities, and general organization of city life. Required texts, Howe, F. C., *The Modern City and its Problems*, (Charles Scribner's Sons, Publishers), 1914 edition; Zeublin, Charles, *American Municipal Progress*, (The Macmillan Co., Publishers), revised edition. 2 hours' credit.

240. SEMINARY. Given only to advanced students by special arrangement. Credit not given for general work but only for research and field investigation. Credit to be arranged.

## SPANISH

30e. ELEMENTARY COURSE. The object of this course is to give the student a thorough training in the fundamentals of Spanish grammar, the ability to read ordinary Spanish prose, and some practice in the writing of Spanish. Students are advised to find means, if possible, for drill in pronunciation. Those desiring University credit must furnish, at the completion of the course, a statement from some person properly qualified, certifying to their thorough proficiency in the pronunciation of Spanish. The name of the person must be submitted when application is made for the course. The use of phonograph records for exercise in pronunciation is recommended. Students may obtain phonographs and the accompanying language records from The R. D. Cortina Company, 105 West 40th Street, New York. Texts, Fuentes and François, *Practical Spanish Grammar*, (Macmillan Co., Publishers), 1919 edition; Roessler and Remy, *First Spanish Reader*, (American Book Co., Publishers), 1916 edition.

Students who have already had some work in Spanish will probably be assigned other texts. Appropriate texts will be submitted for students desiring to specialize in commercial or engineering work.

Students who have previously taken part of this course, or its equivalent, will be allowed to complete it by correspondence, with the understanding that they may not receive more than 5 hours' credit altogether in this course. 5 hours' credit.

31e. INTERMEDIATE COURSE. The work in this course will consist of a certain amount of careful translation, much rapid reading, composition, and reports in both English and Spanish. It is expected that students will continue to perfect themselves in the pronunciation of Spanish. Texts, Ingraham-Edgren, *Brief Spanish Grammar*, (D. C. Heath and Co., Publishers), 1913 edition; Harrison, *An Intermediate Spanish Reader*, (Ginn and Co., Publishers), 1917 edition; Alarcón, *Novelas Cortas*, (Ginn and Co., Publishers), 1906 edition.  $2\frac{1}{2}$  or 5 hours' credit.

32e. ADVANCED COURSE. Rapid reading in Spanish and Spanish-American works; composition. Students are expected to keep up and improve their pronunciation of Spanish. Texts, Blasco Ibáñez, *Vistas Sudamericanas*, (Ginn and Co., Publishers), 1920 edition; Isaacs, Jorge, *María*, Ed. by Pitcher, (Macmillan Co., New York, Publishers), 1923 edition; Hartzenbusch, *La Coja y el Encogido*, (Henry Holt and Co., New York, Publishers), 1911 edition; Galdós, B. Pérez, *Mariela*, (D. C. Heath and Co., Chicago, Publishers), 1923 edition; Warshaw, *Spanish-American Composition Book*, (Henry Holt and Co., New York, Publishers), 1917 edition; Padre Isla, *Gil Blas*, Ed. by Geddes and Palamountain, (D. C. Heath and Co., Chicago, Publishers), 1923 edition.  $2\frac{1}{2}$  or 5 hours' credit.

(This course is open only to students who have completed courses 30e and 31e or their equivalents.)

137e. MODERN SPANISH NOVEL. Prerequisite, fifteen hours of university or college credit in Spanish. Extensive reading in the modern Spanish novel. Students are expected to keep up and improve their pronunciation of Spanish. Texts, Alarcón, *El Sombrero de tres picos*, (Henry Holt and Co., Publishers), 1907 edition; Blasco Ibáñez, *La Barraca*, (Henry Holt and Co., Publishers), 1910 edition; Galdós, *Doña Perfecta*, (American Book Co., Publishers), 1903 edition; Valera, *El Comendador Mendoza*, (American Book Co., Publishers), 1905 edition; Valdés, *Marta y María*, (Ginn and Co., Publisher); Bazán, *El Tesoro de Gastón*. 3 hours' credit.

139e. MODERN SPANISH DRAMA. A study into the life and works of four modern dramatists of Spain. Students are expected to improve their pronunciation and do rapid reading in Spanish. The dramas to be studied are: Galdós, Benito Pérez, *La Loca de la Casa*, edited by J. Warshaw, (Henry Holt and Co., Publishers), 1924 edition, and *Electra*, edited by C. G. Bunnell, (American Book Co., Publishers), 1902 edition; Martínez Sierra, *Sol de la Tarde*, edited by C. D. Cool, (D. C. Heath and Co., Publishers), 1925 edition, and *Sueño de Una Noche de Agosto*, edited by Gardner and Owen, (Henry Holt and Co., Publishers), 1926 edition; Benavente, Jacinto, *El Príncipe que Todo lo Aprendió en los Libros*, edited by Aurelio M. Espinosa, (World Book Co., Publishers), 1918 edition; Echegaray, José, *O Locura O Santidad*, edited by Geddes and Palamountain, (D. C. Heath and Co., Publishers), 1923 edition, and *El Gran Galeoto*, edited by Aurelio M. Espinosa, (Alfred A. Knopf, Publisher), 1918 edition.

Prerequisite, fifteen hours of University or college credit in Spanish. 3 hours' credit.

The editions of the texts listed are preferred but any edition may be used which contain the dramas required.

231e and 232e. SEMINARY IN SPANISH LITERATURE. These two courses are separate and distinct. In each there will be extensive study of an individual author, a period, or a type of literature, the particular subject to be determined through consultation with the instructor. Prerequisite to enrollment in these courses: the student must be regularly enrolled in the Graduate School and must have had the equivalent of at least 21 hours of college credit in Spanish. From 2 to 4 hours' credit will be allowed in each course, depending on the amount of work arranged for the

course. Students will be expected to present satisfactory evidence of their ability to carry on the particular study chosen as the subject of the course.

Arrangements for other courses in Spanish may be made after a complete statement of work previously done in this subject has been submitted to the Director of University Extension.

## ZOOLOGY

2. THEORY OF EVOLUTION. Prerequisite, General Zoology. A course in the theory of organic evolution and related problems. An advanced course which can be taken only by arrangement with the instructor. Texts, Herbert, *The First Principles of Evolution*, (A. and C. Black, Publishers), 1913 edition; Guyer, M. F., *Being Well-Born*, (Bobbs-Merrill Co., Publishers), 1916 edition. 2 hours' credit.

(This course will not count toward the medical requirement.)

## COST OF COLLEGE CREDIT COURSES

The enrollment fees are as follows:

1 hour course ( 8 assignments).....	\$ 4.00
2 hour course (16 assignments).....	8.00
3 hour course (24 assignments).....	12.00
4 hour course (32 assignments).....	16.00
5 hour course (40 assignments).....	20.00

The instructor in any particular course may require assignments to be rewritten or may vary the total number of assignments in case it is found advisable to do so. While assignments are generally written up and returned at the rate of one or two a week, they may be done more rapidly if the student desires, provided always a satisfactory standard of work is maintained. In no case are correspondence students allowed to send in more than six lessons a week.

Students are expected to pay full postage both ways on manuscripts sent to the University. Students should have all papers weighed at the postoffice before mailing them and should enclose enough stamps with each paper to pay for its return. In case the student does not enclose the return postage with the lesson, the paper will be held at this office until the required amount is received. Whenever apparatus is sent from the University for experimental work, students are expected to pay the express charges both ways.

The cost of taking work in the regular session is about \$20.00 a credit hour, counting \$600.00 a year as average expenses of a student. The cost of taking a course by correspondence (exclusive of postage) is \$4.00 a credit hour, which represents less than one-fourth the cost of courses including room and board, to students in attendance at the University. Correspondence work affords an excellent opportunity for those students who wish to do part of their college course at a minimum expense while engaged in other work.

## TEXTBOOKS

The enrollment fees barely cover the actual expense of conducting the courses, hence they do not include textbooks. Texts may be ordered from the publishers or from the Missouri Store Company, 909 Lowry Street, Columbia, Missouri. By proper arrangements with the University Librarian, students may borrow, from the University Library, books other than texts when they are not in use. Books of fiction, indices, and reference books are not for circulation outside of the library.

## FINAL EXAMINATIONS

A written examination will be required at the close of all courses offered by correspondence. Final grades will be made up on the basis of the examination and the papers written throughout the course, but to secure a passing grade the student should make a passing grade on the final examination. In cases where it is inconvenient for the student to take an examination at the University, arrangements must be made by him with some person acceptable to the University, such as a city superintendent of schools, county superintendent of schools or high school principal, to give the examination. In these cases no compensation can be made to the person giving the examination, as the fees charged for correspondence work are not sufficient to cover this additional expense.

## PAYMENT OF FEES

All remittances for fees should be made payable to the University of Missouri, and should be mailed to the Secretary, University of Missouri, Columbia, Missouri. No one is expected to send any fees until notified that his application has been approved. Send money order or check—cash is likely to be lost in the mails and the University can not be responsible.

For further information regarding correspondence courses write to

CHARLES H. WILLIAMS,  
Director of University Extension,  
101 Jesse Hall,  
University of Missouri,  
Columbia, Missouri.



UNIVERSITY OF MISSOURI  
EXTENSION DIVISION

Application for a Correspondence Course  
in University Subjects

Date.....19.....

Mrs.

Mr.

Applicant's full name Miss.....  
(Print or type name)

Present address: St..... City..... County..... State.....

Date of birth..... Present occupation.....

White or colored.....

Name of parent or guardian..... Residing at .....

PREVIOUS EDUCATION

Name of high school or private school attended.....

Name of normal school attended.....

Total units of high school work completed?..... Were you graduated? .....

Names of colleges or universities attended?.....

Hours college credit in normal school and college?.....

Degrees?..... Where taken?.....

Have your high school credits been certified to the University Registrar?.....

Have your normal school or college credits been certified to him?.....

Have you had correspondence or extension class work with the Univ. of Mo.?.....

.....  
Have you been heretofore a student at the University of Missouri?.....

Will this work count in the last 24 hours toward your degree from this University?  
.....

Wish to register in..... (Give School or College)

COURSE DESIRED

Title of course desired..... Hours credit:.....

What college courses have you had that will be of assistance in studying this course

(List of courses in subject desired and related subjects)?.....  
.....

If you have a degree, do you wish GRADUATE credit toward the A. M.?.....  
.....

If you are interested in a correspondence course, fill out this blank and return to Charles H. Williams, Director of University Extension, Columbia, Missouri. Extra copies of the blank may be obtained from him. If you are interested in a high school course write for a high school blank.

# THE UNIVERSITY OF MISSOURI BULLETIN

VOLUME 29, NUMBER 19

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EXTENSION SERIES NO. 57

CHARLES H. WILLIAMS, EDITOR

## EXTENSION CLASS COURSES

ANNOUNCEMENT 1928-1929



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ISSUED FOUR TIMES MONTHLY; ENTERED AS SECOND-CLASS MATTER AT THE  
POSTOFFICE AT COLUMBIA, MISSOURI—1,500

MAY 14, 1928



## ANNOUNCEMENT OF EXTENSION CLASS COURSES

The guiding policy of the University of Missouri is to serve the people of the State. Owing to recent changes by the State Department of Education in requirements for high school teachers, a greatly increased number of teachers will desire to secure University credit through extension courses in the immediate future. In order to serve better the needs of the State, and especially the needs of these teachers, the Extension Division of the University has inaugurated a plan of extension classes.

Under this plan a large number of courses regularly offered at the University will be offered in cities and towns of the State where satisfactory arrangements can be made. The teachers will be special members of the Faculty of the University of Missouri and the courses will be in every way the equivalent of the same courses offered in residence at the University.

### REGULATIONS

1. Extension class instruction may be given in co-operation or connection with other schools of the State wherever satisfactory arrangements can be made.

2. The instructors in such courses shall be chosen, appointed, and paid by the University of Missouri.

3. The minimum qualifications of instructors in such work shall be as follows:

- a. The A. M. degree
- b. Adequate special training in the subject taught
- c. Superior teaching ability

4. The instructors must be approved by the chairman of the department, the dean of the school or college concerned, and the Director of University Extension.

5. Only regularly approved courses may be offered and the instructor must follow the syllabus supplied by the chairman of the University department concerned.

6. Superintendents teaching extension classes are not permitted to enroll teachers from their own systems.

7. At the close of each course a final written examination, consisting of questions supplied by the chairman of the University department concerned, shall be held, covering the entire course, and the examination papers, after having been graded by the instructor, shall be filed with the Director of University Extension.

8. In extension class courses the instructor must meet the class approximately the same number of hours which instructors in the University meet their classes carrying the same amount of credit.

9. A tuition fee of \$4.00 per credit hour shall be paid by each student at the time the course begins. This fee must be paid before the student is entitled to take the work of the course. No tuition fees will be refunded.

10. Before any such course can be definitely approved by the University, satisfactory arrangements for the necessary reference books, laboratory equipment, and laboratory supplies must be made either by the school co-operating or by the class receiving this instruction.

11. University credit will be given for these courses to students who can meet the entrance requirements of the University either as regular or as special students. To be enrolled as a regular student, the applicant must have completed in an approved high school or academy the requisite amount of work for University entrance. To be enrolled as a special student, the applicant must be at least twenty-one years of age and qualified for the course to be given. Credits for these courses can be transferred to the State Teachers' Colleges or to other schools. They will also count for credits toward teachers' requirements or as grades on state certificates. They will not count for credit toward the A. M. degree.

12. Students will not be allowed to take more than ten hours' work by extension class courses and by correspondence courses combined, within one calendar year, except by special permission. Teachers may complete not more than ten hours during the time that they are actually teaching (from September until such time as their service for the year may close). A total amount of one-third of the entire credit necessary for the A. B. or B. S. degree may be secured by extension class and correspondence courses, subject to the regulation that 24 hours of the last year's work must be done in residence in the University.

## STATEMENT OF COURSES

### AGRICULTURE

#### ANIMAL HUSBANDRY

2. **Breeds of Live Stock.** History, development, and characteristics of the leading breeds of live stock; pedigrees and performances of superior individuals among horses, cattle, sheep, and swine. 3 hours' credit.

## FIELD CROPS

1. **Field Crops.** An introductory course dealing with fundamental factors in the production and management of crops. 3 hours' credit.

## HORTICULTURE

1. **General Horticulture.** An introductory course dealing primarily with the location and management of the farm orchard and garden. It embraces the production, harvesting, and storing of fruits and vegetables; also the planning, planting, and management of the home grounds. 3 hours' credit.

100. **General Pomology.** Prerequisite, course 1. A course dealing with the establishment and maintenance of orchards, vineyards, and small fruit plantations. 2 or 3 hours' credit.

106. **Commercial Vegetable Growing.** The use of fertilizers, spraying equipment, forcing structures and irrigation in vegetable growing with discussions on seed growing, labor problems, truck farm management, co-operation and methods of marketing for vegetable growers. 3 or 4 hours' credit.

## SOILS

1. **Soils.** Prerequisite, approved courses in general chemistry and geology. The physical and chemical properties of soils and their relations to soil management. 3 hours' credit. (Candidates for the B. S. in Agriculture, unless excused, will be required, on coming to the University, to complete two hours of laboratory work to make up a total of five hours in Soils 1.)

## BOTANY

1. **General Botany.** A fundamental training course in the subject. 5 hours' credit.

## CHEMISTRY

1. **General Inorganic Chemistry.** An introductory course dealing with the fundamental phenomena and principles of the science. This course is a prerequisite for all other courses in chemistry. 5 hours' credit.

2. **General Inorganic Chemistry.** Prerequisite, course 1 or its equivalent. An extension of course 1. 3 hours' credit. With laboratory work, 5 hours' credit.

15. **Elementary Organic Chemistry.** Introductory course. Prerequisites, courses 1 and 2. 3 hours' credit.

27. **Qualitative Analysis.** Mainly a laboratory course. Must be preceded or accompanied by course 2. 3 hours' credit.

110. **Organic Chemistry.** Prerequisite, should be preceded by ten hours' work in chemistry. Medical students will be admitted to this

course with eight hours' chemistry. 5 hours' credit.

121. **Quantitative Chemical Analysis.** Prerequisite, course 27. The general principles. 5 hours' credit.

### ECONOMICS

1. **General Economics.** An introduction to the general field of economics. Prerequisite to all courses in this department. Courses 1 and 17 are not open to freshmen. 5 hours' credit.

17. **Elementary Accounting.** Prerequisite, General Economics. A study of the technique of accounts and an analysis of the balance sheet and income statement in their usual and special forms. A study of corporation accounting is made with special emphasis on the treatment of net income, dividends, reserves and surplus. Problems in valuation, including obsolescence and depreciation are also given attention. 5 hours' credit.

### EDUCATION

#### (A) EDUCATIONAL PSYCHOLOGY

A102. **Educational Psychology.** Prerequisite, either experimental psychology or a biological science. Introduction to the science of education; application of the methods and results of experimental psychology to the problems of training children. Lectures and laboratory. 3 hours' credit.

#### (B) THE HISTORY AND PHILOSOPHY OF EDUCATION

B125. **History of Education.** To give a better understanding and appreciation of the present educational situation through a study of its development. 3 hours' credit.

B150. **Principles of Education.** A study of the nature and function of education, including the fundamental principles which should guide in educational procedure. 3 hours' credit.

#### (C) EDUCATIONAL ADMINISTRATION

C150. **High School Economy.** Problems of effective methods of school management from the standpoint of teachers in secondary schools. 2 hours' credit.

C170. **Educational Statistics.** Statistical methods for teachers, supervisors, superintendents, and beginning graduate students. 3 hours' credit.

C175. **Administration of Educational Tests and Measurements.** Designed to give the administrator, the supervisor, and the teacher the point of view, the knowledge, and the skill necessary to use tests, scales, and other modern measurements in improving classroom instruction in the elementary and secondary schools. 3 hours' credit.

**C180. Administration of Public Education in the United States.** A fundamental course in the principles and practices of national, state, and county educational administration. 3 hours' credit.

(D) SCHOOL SUPERVISION

**D120. Elementary School Organization and Management.** A study of the major problems of the organization and management from the point of view of the teacher in the rural and village schools. 2 hours' credit.

**D121. Technique of Teaching in Elementary Schools.** A study of the current principles and practices relating to the instructional activities of the elementary classroom teacher. 3 hours' credit.

**D170. Elementary School Curriculum.** A study of the modern elementary school curriculum from the point of view of objectives, methods, and material, with suggestions regarding its practical reorganization. 2 hours' credit.

(G) METHODS IN INDUSTRIAL EDUCATION

**G120. Handwork for Primary Grades.** Related to the first three grades from the standpoint of the regular grade teacher. Develops a practical method of relating the fundamental processes of home and industrial life to the dominant interests of the child through the exercise of the constructive instincts and organized play. Special emphasis upon the use of handwork as a method of teaching primary subject matter. 3 hours' credit.

**G121. Handwork for Intermediate Grades.** Related to the fourth, fifth, and sixth grades. The use of handwork as an illustrative factor in teaching geography, arithmetic, history, literature, and the industries, technique and organization of such forms of handwork as may be used successfully in the regular classroom by the regular teacher. Work in paper and cardboard, book-making, weaving of baskets and textiles, toy-making, and work in thin wood. 3 hours' credit.

(H) METHODS IN OTHER SUBJECTS

**H101. Teaching of Art.** 2 hours' credit.

**H110. Teaching of English.** A study of the best methods and material for teaching the courses in English offered in the high schools in Missouri. 2 hours' credit.

**H128. Teaching of Mathematics.** A study of the best methods and materials for teaching the courses in mathematics offered in the high schools in Missouri. 2 hours' credit.

**H122. Teaching of the Social Studies.** This course has for its aim the study of practical problems in connection with training in the teach-



ing of the social studies in secondary schools. 2 hours' credit.

### ENGLISH

1. **Composition and Rhetoric.** Detailed study and practice in construction of the kinds of composition. 3 hours' credit.

2. **Composition and Rhetoric.** A continuation of course 1. 3 hours' credit.

3 and 4. **English Life and Literature.** Prerequisite, course 1. May also be taken along with courses 1 and 2, but not by students who neither have taken nor are taking course 1. A reading and lecture course upon phases of English life and the progress of English literature. Each half, 3 hours' credit; 2 hours' credit for upperclassmen.

5 and 6. **Masterpieces.** Prerequisite, course 1. May also be taken along with courses 1 and 2, but not by students who neither have taken nor are taking course 1. Critical study of selected masterpieces of English literature, with outside readings grouped as types. Each half, 3 hours' credit; 2 hours' credit for upperclassmen.

50. **Narration.** Prerequisites, courses 1 and 2, and either 3, 4, 5, or 6. Study and practice in writing the short story and related forms of imaginative composition. 3 hours' credit.

175 and 176. **American Literature.** Prerequisites, 60 hours of college credit, including courses 1, 2, and 3 or 4. (a) Sectional development; (b) growth of nationality; (c) present tendencies. Each half, 3 hours' credit.

### FRENCH AND ITALIAN

#### FRENCH

1. **Elementary Course.** 5 hours' credit.

2. **Intermediate Course.** 5 hours' credit.

3. **Advanced Course.** Three hours of the credit for this course may be counted toward a major in the course in French for upperclassmen. 5 hours' credit.

### GEOGRAPHY

6. **Principles of Geography.** Involves (1) a study of the conditions of the physical environment which have a marked bearing upon human activities, (2) a study of the ways in which such activities are related to the environment, and (3) methods of classifying and presenting these several relationships. 3 hours' credit.

### GERMANIC LANGUAGES

1. **Beginning Course in German.** 5 hours' credit.

2. **German Reading, Syntax, and Composition.** Prerequisite, course 1. 5 hours' credit.

3. **Advanced Reading Course.** Prerequisite, courses 1 and 2. 5 hours' credit.

### HISTORY

1. **Early European History.** Including England. General European development to 1648. Four hours' credit only for seniors. 5 hours' credit.

6. **Later European History.** 5 hours' credit.

8. **American History.** Prerequisite, courses 1 or 6. 5 hours' credit.

117. **Political and Social History of England.** Prerequisite, courses 1 or 6. Medieval and early modern periods. 3 hours' credit.

118. **Political and Social History of England.** Prerequisite, courses 1 or 6. Modern and recent period. 3 hours' credit.

### HOME ECONOMICS

30. **Food in Relation to Health.** A general course in nutrition planned for students who are not specializing in Home Economics. No prerequisites. No laboratory. Open to both men and women. 3 hours' credit.

### INDUSTRIAL ARTS

G120. **Handwork for Primary Grades.** For description see Education: (G) Methods in Industrial Education. 3 hours' credit.

G121. **Handwork for Intermediate Grades.** For description see Education: (G) Methods in Industrial Education. 3 hours' credit.

### LATIN

10. **Cicero's Orations.** Open to students entering with two entrance units. Selected orations and letters of Cicero; training in syntax and forms of the Latin language. 5 hours' credit.

20. **Virgil's Aeneid.** Prerequisite, three entrance units in Latin. Study of the subject matter, form, prosody, and syntax. 5 hours' credit.

30. **Cicero's Essays on Friendship and Old Age.** Prerequisite, course 10 or three entrance units in Latin. Careful review of forms and syntax. 5 hours' credit.

35. **Sallust's Jugurtha.** Prerequisite, course 10 or three entrance units in Latin. 3 hours' credit.

40. **Ovid: Selected Poems.** Prerequisite, course 20 or course 30, or four entrance units in Latin. 2 hours' credit.

50. **Latin Prose Composition.** First course. 1 hour's credit.

### MATHEMATICS

1. **General Mathematics.** Prerequisite, one entrance unit in mathematics. 3 hours' credit.

2. **Trigonometry and Algebra.** Prerequisite, one unit in algebra for entrance. Credit in course 1 and credit in course 2 will be allowed only if the election of both courses is approved by the chairman of the department. 5 hours' credit.

4. **Analytic Geometry.** Prerequisite, course 2, of which it is the natural continuation. Plane and solid analytical geometry and introduction to the calculus. 5 hours' credit.

5. **Differential Calculus.** Prerequisites, courses 2 and 4, or, with special permission, course 3. 5 hours' credit.

Before electing any of the courses which follow, the student should consult the instructor. Except where noted, the calculus is a prerequisite.

106. **Integral Calculus.** This course is the natural continuation of course 5, which is prerequisite for this course. 5 hours' credit.

155. **The Mathematics of Business and Insurance.** Prerequisite, course 1 or course 2. The fundamental methods and computations involved in annuities, depreciation, sinking funds, stocks and bond calculations. 3 hours' credit.

### PHYSICS

1. **Elementary College Physics.** 5 hours' credit.

2. **Elementary College Physics.** A continuation of 1. Courses 1 and 2 together cover in an elementary way most of the field of physics. 3 hours' credit.

### POLITICAL SCIENCE AND PUBLIC LAW

1. **American Government.** A basic course dealing with the fundamental principles of political science and the organization, principles, and functions of American government in all its divisions—national, state, and local. Four hours' credit to seniors. 5 hours' credit.

### RURAL SOCIOLOGY

115. **Rural Sociology.** A study of social conditions in rural communities and their improvement. Definite rural social problems are studied, such as the drift to the cities, farming as an occupation, land problems, farm labor problems, co-operation, the rural school, the rural church, rural health and sanitation, the rural home, the social center. 3 hours' credit.

117. **Rural Community Organization.** Prerequisite, course 115. An advanced course dealing with the social forces, factors, agencies, and institutions to be found in various types of rural and small town communities. Special emphasis is placed on community studies and the different possible plans of organization applicable to rural communities, small towns, and counties, together with practical community programs

to promote social progress. Organization methods are discussed in detail. The course is designed for teachers, social workers, county agricultural and home demonstration agents, recreation workers, and others who serve the community through various agencies and organizations. 3 hours' credit.

119. **Social Case Work.** Prerequisite, Sociology courses 110 and 112. This course deals with the problems of social reconstruction of individuals and families. The general principles and processes of social treatment are considered and students are familiarized with recognized methods of modern social work as developed in rural communities, small towns, and cities. In connection with this course additional credit for field work may be arranged. 3 hours' credit.

190. **Leadership.** Prerequisite, 8 hours of Sociology. A study of the bases of leadership in their biological, psychological, and sociological aspects. Leaders in such fields as agriculture, education, religion, politics, and social organization, are analyzed for the traits that give them leadership. It is the purpose to train the students in the principles and methods involved in the discovery, enlistment, and development of leadership in community affairs. 3 hours' credit.

219. **Advanced Social Case Work.** Prerequisite, course 119. An advanced course in which special types of individual and family problems are studied. Administrative problems incident to the organization and conduct of various forms of social and public welfare work are considered. Advanced field work training with additional credit is provided. 2 hours' credit.

## SOCIOLOGY

1. **General Sociology.** An introduction to the scientific study of social life, its origin, evolution, and organization. A study of a number of concrete problems. 5 hours' credit.

112. **Child Welfare.** The following subjects are treated: Heredity and environment as social factors; infant conservation; welfare responsibilities of the school, emphasizing the physical and mental well-being of the child, play, and compulsory and industrial education; child labor, diagnosis and treatment of delinquency; care of the dependent and neglected child; child-caring agencies, public and private; and a community program of child welfare. 3 hours' credit.

117. **Community Organization.** For description see Rural Sociology. 3 hours' credit.

119. **Social Case Work.** For description see Rural Sociology. 3 hours' credit.

190. **Leadership.** For description see Rural Sociology. 3 hours credit.

219. **Advanced Social Case Work.** For description see Rural Sociology. 2 hours' credit.

### SPANISH

30. **Elementary Course.** 5 hours' credit.

31. **Intermediate Course.** 5 hours' credit.

32. **Advanced Course.** Rapid reading of Spanish and Spanish-American works. Three hours of the credit for this course may be counted toward a major in the courses in Spanish for upperclassmen. 5 hours' credit.

### ZOOLOGY

1. **General Zoology.** A course in the general principles of zoological science. 5 hours' credit.

For further information regarding extension class courses write to Charles H. Williams, Director of University Extension, University of Missouri, Columbia, Missouri.

# THE UNIVERSITY OF MISSOURI BULLETIN

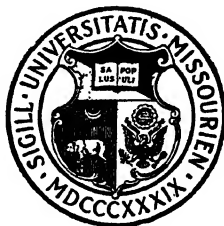
VOLUME 29, NUMBER 20

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EXTENSION SERIES NO. 58  
CHARLES H. WILLIAMS, EDITOR

## EXTENSION DIVISION

ANNOUNCEMENT OF DEPARTMENT OF  
PUBLIC INFORMATION



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ISSUED FOUR TIMES MONTHLY; ENTERED AS SECOND-CLASS MATTER AT THE  
POSTOFFICE AT COLUMBIA, MISSOURI—5,000

MAY 21, 1928

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## FOREWORD

The purpose of this bulletin is to explain to citizens of the State of Missouri the service offered by the Bureau of Public Information of the Extension Division of the University of Missouri.

The material that has been called for since the establishment of the service proves that there is a very real need for this bureau. It is evident that the people of Missouri are glad to be furnished authentic sources for information.

All material listed in this bulletin is for free distribution with the exception of plays and recitations. However, the borrower is expected to pay postage both ways.

In order to expedite services outlined in this bulletin, all communications should be addressed to

DEPARTMENT OF PUBLIC INFORMATION  
UNIVERSITY EXTENSION DIVISION  
1 B. AND P. A. BLDG.  
COLUMBIA, MISSOURI

## PACKAGE LIBRARIES

The aim of the Package Library Service is to extend to the citizens of the State information on current questions, particularly to those organizations and individuals having inadequate library facilities.

For the past year this Bureau has sent out material to teachers, students, women's clubs, community and civic clubs, public health organizations and individuals. Information has been sent to all parts of the State. A number of requests have come from other States, but due to the demand of our own State, it has been necessary to limit the service to Missouri. However, in the event another State wishes information on the State of Missouri, the request is filled.

The list of package libraries is submitted below. From time to time new material is added and old packages revised and supplemented. In case a subject desired is not listed in this bulletin, effort will be made to secure the information whenever possible.

### RULES GOVERNING THE LOAN OF MATERIAL

1. Address all communications to the Department of Public Information, Extension Division, 1 B. and P. A. Building, University of Missouri, Columbia, Mo.

2. State definitely the topic on which the paper is to be written. Too often a subject is too miscellaneous or too broad to furnish adequate material. Choose the most interesting phase of a topic and limit the paper to that phase. American Landscape Painters can be treated much more adequately than American Painters.

3. Allow two weeks' time for us to prepare the package library for you.

4. Package libraries may be borrowed for a period of two weeks with the privilege of one renewal for two weeks. A fine of 10 cents is charged if an overdue notice has to be sent.

5. The borrower pays postage both ways for material obtained from this office. No other charge is made for the service.

6. Return every article in the package sent to you. A minimum fine is charged for each article lost.

7. Books are not supplied. Requests for books will be referred to the University Library, and will be sent out whenever possible. Books may be obtained also from the State Library Commission, State Capitol, Jefferson City, Missouri, or from your local public library. Readers who desire to purchase books recommended in the club outlines can order them through local book dealers. Prices will be furnished on request.

### LIST OF PACKAGE LIBRARIES

The following list is available for distribution at the present time. The list is constantly changed and increased as the need arises. Supplements will be issued as changes are made.

Ability  
Abyssinia  
Accidents  
Accidents—Industrial  
Accidents—Prevention  
Actors and Actresses  
Actors Equity Association  
Adult Education  
Advertising  
Advertising—Fraudulent

Aeronautics  
Aeronautics—Commercial  
Aeronautics—Laws and Regulations  
Aeronautics—Military  
Aeroplanes—History  
Afghanistan  
Africa  
Africa—Religious Institutions and  
Affairs  
Africa—Social Life and Customs

- Age  
 Agricultural Chemistry  
 Agricultural Engineering  
 Air Mail Service  
 Air Policy of the U. S.  
 Alamo, The  
 Alaska  
 Albania—Foreign Relations  
 Albania—Politics and Government  
 Alcohol  
 Alimony  
 Almshouses  
 Alphabet  
 American Association of University Women  
 American Federation of Labor  
 American Philosophical Society  
 Americanism  
 Americanization  
 American Museum of Natural History  
 Americans  
 Amusements  
 Aniline  
 Animals  
 Animals—Evolution  
 Animals—Traits  
 Anthropology  
 Antiques  
 Apprenticeship  
 April Fools' Day  
 Arabia  
 Arbitration and Conciliation  
 Arbitration and Conciliation—Industrial  
 Arbor Day  
 Archaeology  
 Architecture  
 Architecture—Colonial  
 Architecture—House Plans  
 Arctic Regions  
 Aristocracy  
 Arizona—Politics and Government  
 Armies and Navies  
 Armistice Day  
 Art  
 Art—American  
 Art—Appreciation  
 Art—Austrian  
 Art—British  
 Art—Children  
 Art—Chinese  
 Art—Classical  
 Art—Collections  
 Art—Criticism  
 Art—Dutch  
 Art—Education  
 Art—Egyptian  
 Art—Finnish  
 Art—Flemish  
 Art—French  
 Art—Galleries and Museums  
 Art—Galleries and Museums—Metropolitan  
 Art—German  
 Art—Industrial  
 Art—Irish  
 Art—Italian  
 Art—Japanese  
 Art—Mexican  
 Art—Religious  
 Art—Spanish  
 Arts and Crafts  
 Asia  
 Asia—Religious Institutions and Affairs  
 Astrology  
 Astronomy  
 Atheism  
 Athletics  
 Athletics—College  
 Atmosphere  
 Atoms  
 Auroras  
 Australia  
 Austria—Description and Travel  
 Authorship  
 Automobile  
 Automobile—Industry  
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 Bagdad  
 Balkan States  
 Baltic States  
 Bandits and Banditry  
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- Bible
- Bible as Literature
- Biblical Characters
- Billboards
- Biography
- Birds
- Birth Control
- Birth Rate
- Black Hills (South Dakota)
- Blind—Education
- Blindness
- Blood—Analysis and Chemistry
- Bolshevism
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- Books—Juvenile
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- Boston
- Boston Athenaeum
- Boy Scouts
- Brahmanism
- Brasses
- Bridges
- Brokers
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- Budgets
- Budgets—Family
- Building
- Building Industry
- Bulgaria—Politics and Government
- Business
- Butterflies
- Buying
- Calendar
- California
- Camp Fire Girls
- Camps—Summer
- Canada
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- Canada—Description and Travel
- Canada—History
- Canada—Industries and Resources
- Canada—Politics and Government
- Canada and the United States
- Cancer
- Cape Cod
- Capital and Labor
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- Capital Punishment
- Capitals
- Carnegie Institute
- Cartoonists
- Cartoons and Caricatures
- Cathedrals
- Cats
- Cattle
- Caves
- Cellulose
- Cemeteries
- Censorship
- Census
- Central America
- Ceylon
- Character
- Character—Tests
- Charities
- Chautauqua
- Chemistry
- Chemistry—Technical
- Chicago
- Chicago—Politics and Government
- Child Health Day
- Child Labor
- Child Study
- Child Welfare
- Children—Care and Hygiene
- Children—Character Training
- Children—Colonial
- Children—Education
- Children—Gifted
- Children—Literature
- Children—Management and Training
- Children in Art
- Chimes
- China
- China—Bandit Raids
- China—Civil War, 1924.
- China—Description and Travel
- China—Economic Conditions
- China—Foreign Relations
- China—History
- China—Nationalist Movement
- China—Politics and Government
- China—Religion
- China—Social Conditions
- China—Social Life and Customs
- China—Student Movement
- China and the United States
- Chinese Students in the United States
- Chinese Temples
- Christian Endeavor
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- Christmas

- Christmas—Carols
- Church and Churches
- Church and Social Problems
- Church and State
- Church of England
- Churches—United States
- Church Unity
- Cigarettes
- Cities and Towns
- Citizenship
- Citizenship—Education for
- City and Country
- City and Town Life
- City Government
- City Manager Plan
- City Planning
- Civic Problems
- Civilization
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- Clocks
- Clothing and Dress
- Clothing and Dress—Children
- Clothing and Dress—Color
- Clothing and Dress—Patterns
- Clothing Selection
- Clouds
- Clowns
- Clubs
- Clubs—Boys
- Clubs—Business
- Clubs—Girls
- Coal
- Coal Distillation
- Coffee
- Colds
- Collectors
- College Students
- Colleges—Chapel
- Colleges—Extra-Curricular Activities
- Colleges—Glee Clubs
- Colleges—Junior
- Colleges—Professors and Instructors
- Colleges—Training
- Colleges and Universities
- Colleges and Universities—Entrance Requirements.
- Colleges for Women
- Color
- Commerce
- Communism
- Communism—Balkans
- Communism—Great Britain
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- Communism—Turkey
- Communism—United States
- Community Advertising
- Community Singing
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- Conference on Limitation of Armament, Washington D. C.
- Conference on Limitation of Naval Armaments, Geneva, 1927
- Conservation
- Contests
- Cookery
- Cookery—American
- Cookery—Chinese
- Cookery—Italian
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- Corn
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- Costumes
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- Country Church
- Country Stores
- Courts—Juvenile
- Courts—United States
- Cowboys
- Crime
- Crime—Causes of
- Crime—Prevention
- Crime—United States
- Crime and Criminals
- Crime and Criminals—Europe
- Crime and Criminals—United States
- Crime and Insanity
- Criminal Law
- Cuba
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- Cuba—Industries and Resources
- Cuba—Politics and Government
- Culture
- Current Events
- Current Writers
- Current Writers—Humorous
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- Curriculum, The
- Custom
- Customs Service
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Dams	Editors and Editing
Dancing	Education
Deafness	Education—Australia
Debating	Education—California
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Debts—Public	Education—China
Debts—War	Education—Co-education
Declaration of Independence	Education—Compulsory
Defectives	Education—Cooperative
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Defectives—Physical	Education—Egypt
Delaware	Education—Elementary
Delinquency	Education—English
Democracy	Education—Europe
Democratic Party	Education—Hawaiian Islands
Denatured Food	Education—Health
Denmark	Education—History of
Denmark—Politics and Government	Education—International
Dentistry	Education—Japan
Deserts	Education—Mass
Diamonds	Education—Mexico
Dictionaries	Education—Moral
Diet	Education—Religious
Disarmament	Education—Research
Diseases	Education—Rural
District of Columbia	Education—Secondary
Divorce	Education—Sex
Divorce—Turkey	Education—Southern States
Dixie Land	Education—Study and Teaching
Dogs	Education—United States
Drainage	Education—Value of
Drama	Education—Visual
Drama—American	Education—Vocational
Drama—Chinese	Education—Washington
Drama—Criticism	Education Week
Drama—English	Educational Bill—Federal
Drama—French	Educational Measurements
Drama—Greek	Egypt—Antiquities
Drama—Irish	Egypt—Description and Travel
Drama—Italian	Egypt—Foreign Relations
Drama—Japanese	Egypt—History
Drug Habit	Egypt—Politics and Government
Drugs and Patent Medicine	Elections
Dutch Language—Dialects	Electricity
Dyeing	Electrons
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Earthquakes	Ellis Island
Earthquakes and Building	Eminent Men and Women
East and West	Emotions
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East Indies	

- Endowments
- Engineering
- Engines
- England
- England—Description and Travel
- England—Economic Conditions
- England—Intellectual Life
- England—Religious Institutions and Affairs
- England—Social Conditions
- England—Social Life and Customs
- England and the United States
- English Language
- English Language—Study and Teaching
- Engravings
- Epitaphs
- Eskimos
- Esthetics
- Etchings
- Ethics
- Etiquette
- Eucharistic Congress
- Eugenics
- Europe—Description and Travel
- Europe—Economic Conditions
- Europe—Foreign Relations
- Europe—Industries and Resources
- Europe—Politics and Government
- Europe and the United States
- Euthenics
- Evangelistic Work
- Evolution
- Executors and Administrators
- Expeditions
- Experiences
- Exploration
- Exploration—Polar
- Export Trade
- Expositions
- Extension Service—University and Government
- Family, The
- Far East
- Farm Animals
- Farm Clubs
- Farm Crops
- Farm Legislation
- Farm Life
- Farm Loans
- Farm Machinery
- Farm Organization
- Farm Problems
- Farm Produce—Prices
- Farm Relief
- Farm Women
- Farmer and Education, The
- Fascism
- Fathers
- Father's Day
- Federal Reserve System
- Federal Rights
- Feebleminded
- Feminism
- Fiction
- Fiction—American
- Fiction—Dutch
- Fiction—English
- Fiction—French
- Fiction—Historical
- Fiction—Irish
- Fiction—Norway
- Finance—International
- Finger Prints
- Firearms
- Fire Marks
- Fire—Prevention
- Fires
- First Aid
- Fisheries
- Fishes
- Flags—National
- Flag Day
- Fleas
- Flies
- Floods
- Floods—Control
- Floors
- Florida
- Flowers
- Folklore
- Folk Songs
- Food and Nutrition
- Food and Nutrition—Breads and Pastries
- Food and Nutrition—Canning
- Food and Nutrition—Children
- Food and Nutrition—Fats
- Food and Nutrition—Fruits
- Food and Nutrition—Meats
- Food and Nutrition—Milk
- Food and Nutrition—Vegetables
- Football

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 France—Reconstruction  
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 Fur Industry  
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 Great Britain—Colonies and Dominions  
 Great Britain—Economic Conditions  
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 Greece—Description and Travel  
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- Home Ownership
- Home—Spirit of
- Honesty
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- Hospitals
- Hotels
- House Decoration
- House Decoration—Curtains
- House Decoration—Pictures
- Housing
- Humanism
- Humor
- Hungary
- Hunting
- Huntington Art Collection
- Hurricanes
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- Icebergs
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- Immigrants in the United States
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- Impressionism
- Income Tax
- India—Description and Travel
- India—History
- India—Politics and Government
- India—Social Conditions
- Indiana—Politics and Government
- Indians
- Indians—Art
- Indians—Dances
- Indians—Legends
- Indians—Literature
- Indians—Music
- Indians—Totem Poles
- Indian Summer
- Industrial Cooperation
- Industry
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- Inheritance Tax
- Insanity
- Insects
- Installment Plan
- Institute of Pacific Relations
- Insulin
- Insurance
- Insurance—Automobile
- Insurance—Crop
- Insurance—Industrial
- Insurance—Life
- Insurance—Social
- Insurance—State
- Insurance—Unemployment
- Intellectuals
- Intelligence Tests
- International Bureau of Education
- Internationalism
- International Law and Relations
- Inventions
- Investments
- Investment Trust Companies
- Iowa
- Ireland
- Ireland—Civilization
- Ireland—Description and Travel
- Ireland—Economic Conditions
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- Ireland—Politics and Government
- Ireland—Religious Institutions and Affairs
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- Italy—Rome
- Jamaica
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- Java—Social Customs
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# ANNOUNCEMENT DEPARTMENT OF PUBLIC INFORMATION

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Jews—Political and Social Conditions	Literature—American
Jews—Religion	Literature—Austrian
Jews in the United States	Literature—Canadian
Journalism	Literature—Chinese
Jury	Literature—Criticism
Juvenile Writers	Literature—English
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Kansas	Literature—German
Kentucky	Literature—Greek
Kindergarten	Literature—Irish
Ku Klux Klan	Literature—Italian
	Literature—Japanese
Labor	Literature—Polish
Labor—Hours of	Literature—Russian
Labor—Legislation	Literature—Scandinavian
Labor—Organization	Literature—Spanish
Labor and Laboring Classes	Literature—Spanish American
Labrador	Lobbying
Lace and Lace Making	Locomotives
Lacquer and Lacquering	Longevity
Laissez Faire	Lumber and Lumbering
Landscape Gardening	Lunch Rooms
Land Tenure	Lynching
Language and Languages	
Latin America	Machinery
Latin America and the United States	Machines in Industry
Laughter	McNary-Haugen Bill
Laundry	Madagascar
Law	Madonna in Art
Law—Enforcement	Madonnas
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Lawyers	Magic
League of American Nations—(proposed)	Majority Rule
League of Nations	Malaria
Leather	Mammoth Cave
Leather Waste	Man—Prehistoric
Legends	Manchuria
Legislation—Women	Manufacturing
Leisure	Marionettes
Leprosy and Lepers	Marketing
Libraries	Marketing—Cooperative
Library of Congress	Marriage
Life	Marriage—Companionate
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Light	Marriage—Russia
Lighthouses	Mars
Lighting Fixtures	Maryland
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Linen—Household	Mason and Dixon's Line
Liquor Problem—Germany	Massachusetts—Description and Travel
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- May Day
- Meal Planning and Table Service
- Medical Service, Cost of
- Medicine
- Melodrama
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- Mental Telepathy
- Menus
- Merchant Marine
- Methodism
- Metric System
- Mexico
- Mexico—Constitution
- Mexico—Economic Conditions
- Mexico—History
- Mexico—Industries and Resources
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- Mexico—Social Conditions
- Mexico and the United States
- Michigan
- Migration from Farms
- Militarism
- Military Schools
- Military Training
- Military Training Camps
- Millionaires
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- Minimum Wage
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- Missouri
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- Missouri—Artists
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- Missouri—Botanical Garden
- Missouri—Capitol
- Missouri—Cities
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- Missouri—Description and Travel
- Missouri—Education
- Missouri—Farm Crops
- Missouri—Folklore
- Missouri—Governors
- Missouri—History
- Missouri—Laws
- Missouri—Literature
- Missouri—Mules
- Missouri—Ozarks
- Missouri—Parks
- Missouri—Poems
- Missouri—Poets
- Missouri—Politics
- Missouri—Resources
- Missouri—Taxation
- Missouri—University
- Missouri Compromise
- Modernism
- Mohammedanism
- Monasteries
- Money
- Money—History of
- Monopolies
- Monroe Doctrine
- Montana
- Monte Carlo
- Monuments—National
- Mormons and Mormonism
- Morocco
- Mothers
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- Motion Pictures—Actors and Actresses
- Motor Bus Lines
- Mound Builders
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- Mural Painting—American
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- Music—Band
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- Music—Children
- Music—Foreign
- Music—French
- Music—Interpretation
- Music—Italian
- Music—Mechanical
- Music—Study of
- Music—United States
- Music in the Home
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| Musicians—American                | Norway—Description and Travel                   |
| Musicians—Foreign                 | Norway—History                                  |
| Mythology                         | Nurseries                                       |
| Mythology—Chinese                 | Nurses and Nursing                              |
| Names                             | Occupational Therapy                            |
| National Characteristics          | Occupations                                     |
| National Consumers' League        | Ocean, The                                      |
| National Education Association    | Ocean Life                                      |
| Nationalism and Nationality       | Ocean Liners                                    |
| Naturalization                    | Ohio  |
| Nature Study                      | Ohio—History                                    |
| Naval Colleges                    | Old Age   |
| Navigation                        | Olympic Games                                   |
| Near East                         | Open and Closed Shop                            |
| Near East and the United States   | Opera   |
| Nebraska                          | Opium   |
| Negroes                           | Opium Trade                                     |
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| Negroes—Industry                  | Orchestras                                      |
| Negroes—Literature                | Oregon  |
| Negroes—Music                     | Orphanage                                       |
| Negroes—Segregation               | Oysters   |
| Negroes—South America             | Pageants  |
| Negroes—Suffrage                  | Paint   |
| Negroes in the United States      | Painters—American Sea Painters                  |
| New England                       | Painters—Western Life                           |
| New Mexico                        | Painting  |
| New Orleans                       | Painting—American                               |
| New Year                          | Painting—Australian                             |
| New York                          | Painting—Austrian                               |
| New York City                     | Painting—Belgian                                |
| New York City—Crime               | Painting—Chinese                                |
| New York City—Economic Conditions | Painting—Dutch                                  |
| New York City—Hotels              | Painting—English                                |
| New York City—Literary            | Painting—Flemish                                |
| New York City—Social Conditions   | Painting—French                                 |
| New York City—Theaters            | Painting—German                                 |
| New Zealand                       | Painting—Italian                                |
| Newspaper Men                     | Painting—Mexican                                |
| Newspapers                        | Painting—Norway and Sweden                      |
| Newspapers—Columns                | Painting—Polish                                 |
| Newspapers—United States          | Painting—Russian                                |
| Niagara                           | Painting—Spanish                                |
| Nicaragua                         | Palestine                                       |
| Nicaragua—American Intervention   | Palestine—Description and Travel                |
| Noise                             | Palestine—History, Politics and Govern-<br>ment |
| Nominations                       | Palestine—Industries and Resources              |
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- Pan-Americanism
- Pan-American Union
- Pan-Asiatic Movement
- Pantomime
- Parents
- Parent-Teacher Associations
- Parks
- Parks—City
- Parks—National
- Parks—State
- Parliamentary Law and Practice
- Parole System
- Patents
- Paupers
- Peabody Foundation
- Peace
- Peace—Proposals
- Penal Institutions
- Pensions
- Pensions—Industrial
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- Pensions—Teachers
- Permanent Court of International Justice
- Petroleum
- Petroleum—Conservation
- Petroleum—United States
- Pewter
- Philanthropy
- Philippine Independence
- Philippine Islands
- Photography
- Photography—Aerial
- Photography—Commercial
- Physical Education
- Physicians
- Physics
- Physiology
- Pigeons
- Pioneer Women
- Pirates
- Plants
- Play and Recreation
- Playgrounds
- Plays
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- Poetry—Chinese
- Poetry—English
- Poetry—Selections
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- Poets—Laureate
- Poland
- Political Science—English
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- Pompeii, Italy
- Population
- Population—England
- Population—Ireland
- Population—United States
- Porto Rico
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- Portugal—Politics and Government
- Postal Service
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- Poultry—Breeds
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- Presidential Campaigns
- Presidential Candidates
- Presidential Terms
- Primaries
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- Prisoners
- Prison Labor
- Prisons
- Prisons—Reform
- Prizes and Awards
- Probation
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- Prohibition
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- Prohibition—Political Aspects
- Prosperity
- Protestantism
- Proverbs
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- Psychiatry
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| Radio                              | Schools—Summer               |
| Radio—Broadcasting                 | Scholarships and Fellowships |
| Radio—Laws and Requirements        | Science                      |
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| Railroads—Accidents                | Sculpture                    |
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| Refuse and Refuse Disposal         | Shakespeare, William         |
| Religion                           | Sheep                        |
| Religion and Science               | Sheppard-Towner Act          |
| Religious Freedom                  | Shipbuilding                 |
| Rent                               | Shipping—United States       |
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| Restaurants                        | Short Stories—Selections     |
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| Royalty                            | Silhouettes                  |
| Rubber                             | Silicon                      |
| Rugs                               | Silk                         |
| Rumania                            | Silver                       |
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| Rural Churches                     | Singapore                    |
| Rural Life                         | Single Tax                   |
| Rural School Consolidation         | Skyscrapers                  |
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| Russia                             | Sleep                        |
| Russia—Description and Travel      | Smithsonian Institution      |
| Russia—Economic Conditions         | Social Customs               |
| Russia—History                     | Social Problems              |
| Russia—Politics and Government     | Social Psychology            |
| Russia—Religion                    | Social Reform                |
| Russia—Soviet Russia               | Socialism                    |
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| Salesmanship                       | Soldiers                     |
| Salvage                            | Soldiers' Bonus              |
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| Santa Claus                        | Song Writers                 |
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| Schools                            | South Africa                 |

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- South America—Argentina
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- South America—Colombia
- South America—Description and Travel
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- South America—Politics and Govern-  
ment
- South America—Surinam (Dutch Gui-  
ana)
- South America—Uruguay and Paraguay
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- Spain—Description and Travel
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- Synthesis
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- Tacna-Arica Question
- Tammany Hall
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- Taxation—Great Britain
- Taxation—United States
- Taxidermy
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- Tenants and Tenantry
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- Texas—History
- Textile Fibers
- Textiles and Clothing
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- Theology
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| Tuberculosis                                     | Virgin Islands                   |
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| Typewriting                                      | Volcanoes                        |
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| United States                                    | War—Post-War Conditions          |
| United States—Antiquities                        | War—Revolutionary                |
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| United States—Army                               | War—World-War—Arabia             |
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| United States—Congress                           | Washington                       |
| United States—Constitution                       | Washington, D. C.                |
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| United States—Defense                            | Waterfalls                       |
| United States—Department of Agricul-<br>ture     | Water Power—United States        |
| United States—Department of Justice              | Waterways                        |
| United States—Description and Travel             | Wealth                           |
| United States—Diplomatic and<br>Consular Service | Weddings                         |
| United States—Economic Conditions                | Weeks                            |
| United States—Finance                            | West                             |
| United States—Foreign Population                 | West—Economic Conditions         |
| United States—History                            | West Indies                      |
| United States—Industries and Resour-<br>ces      | White House                      |
| United States—Intellectual Life                  | Who's Who in America             |
| United States—Military Policy                    | Wild Flowers                     |
| United States—Navy                               | Wills                            |
| United States—Politics and Govern-<br>ment       | Witchcraft                       |
| United States—State Department                   | Wives in Art                     |
| United States Shipping Board                     | Wives of Presidents              |
| Unknown Soldier, The                             | Woman Suffrage                   |
| Utah   | Women                            |
|  | Women—Artists                    |
| Vacations  | Women—Character                  |
| Vatican  | Women—China                      |
| Vaudeville                                       | Women—Clubs and Societies        |
| Ventilation                                      | Women—Education                  |
|  | Women—Egypt                      |
|  | Women—Employment                 |
|  | Women—Equal Rights               |
|  | Women—France                     |
|  | Women—Japan                      |
|  | Women—Social and Moral Questions |
|  | Women—Turkey                     |



Women—United States	Wooden Shoes
Women—Vocational Guidance	Woolen and Worsted Manufactures
Women as Bankers	Workmen's Compensation
Women as Inventors	World Conference on Faith and Order
Women as Journalists	World Federation of Education Associations
Women as Jurors	World Forestry Congress
Women as Lawyers	World Politics
Women as Physicians	Writing
Women in Business	X-ray
Women in Industry	Yellow Fever
Women in Literature	Y. M. C. A.
Women in Medicine	Young Women
Women in Politics	Y. W. C. A.
Women in Public Life	Youth
Women in War	Yugoslavia
Women of History	Zionism
Women Writers	
Wonders of the World	
Wood	

### EMINENT MEN AND WOMEN

Special biographical material on eminent men and women has been assembled for the use of clubs, schools, etc. And while adequate information cannot always be supplied, an earnest attempt is made to secure worthwhile biographical material on requested topics.

Biographical material is now available on the following men and women.

Abbott, Lyman	Bailey, Temple
Abd-El-Krim	Balzac, Honoré de
Adams, John	Balzac, Jean de
Addams, Jane	Barker, Granville
Agassiz, Louis	Barrie, Sir James
Aiken, Conrad	Barrington, E.
Alcott, Louisa M.	Barton, Clara
Alexander the Great	Beecham, Sir Thomas
Alger, Horatio	Beecher, Henry Ward
Amundsen, Roald	Beethoven, Ludwig
Andersen, Hans Christian	Bell, Gertrude
Anderson, Sherwood	Belloc, Hilaire
Angell, George Thorndike	Bennett, Arnold
Annunzio, Gabriele d'	Beveridge, Albert J.
Anthony, Susan B.	Bismarck, Otto von
Arlen, Michael	Blake, William
Arliss, George	Bok, Edward
Arnold, Matthew	Bond, Carrie Jacobs
Asbury, Herbert	Boone, Daniel
Asquith, Herbert Henry	Borah, William E.
Atherton, Gertrude	Bourget, Paul
Audubon, John James	Boyd, James
Austen, Jane	Bracco, Roberto
Bacon, Francis	Brandeis, Justice Louis D.

Briand, Aristide	Croy, Homer
Bridges, Robert	Curci, Galli
Brontë, Charlotte	Curie, Madame Marie
Brontë, Emily	Curwood, James Oliver
Brooke, Rupert	Damrosch, Walter
Broun, Heywood	Davis, Jefferson
Browning, Elizabeth Barrett	Davis, Richard Harding
Browning, Robert	Dawes, Charles G.
Bryan, William Jennings	Dawes, Mrs. Charles G.
Bryant, William Cullen	Debs, Eugene V.
Bunyan, John	Depew, Chauncey M.
Burbank, Luther	Descartes, René
Burke, Thomas	Dickens, Charles
Burnett, Frances Hodgson	Dickinson, Emily
Burns, Robert	Disraeli, Benjamin
Burr, Aaron	Dore, Gustave
Burroughs, John	Dos Passos, John
Burrows, Joseph H.	Doughty, Charles Montague
Butler, Ellis Parker	Doyle, Sir Arthur Conan
Bynner, Witter	Dreiser, Theodore
Byrne, Donn	Drew, John
Byron, Lord	Drinkwater, John
Cadman, Charles Wakefield	Dunsany, Lord
Calles, Plutarco Elias	Dürer, Albrecht
Canfield, Dorothy	Edwards, Jonathan
Cannon, Joseph	Egan, Maurice Francis
Carson, Kit	Eggleston, Edward
Caruso, Enrico	Eliot, Dr. Charles W.
Cather, Willa S.	Eliot, George
Catt, Carrie Chapman	Ellis, Havelock
Cellini, Benvenuto	Ellis, J. Breckenridge
Chaliapin, Feodor Ivanovitch	Emerson, Ralph Waldo
Chesterton, Gilbert K.	Epstein, Jacob
Churchill, Winston	Erskine, John
Clemenceau, Georges	Farrar, Geraldine
Cleveland, Grover	Ferber, Edna
Clough, Arthur Hugh	Ford, Edsel B.
Cobb, Irvin	Ford, Henry
Cody, William	Forster, E. M.
Coleridge, Samuel Taylor	Fosdick, Harry Emerson
Columbus, Christopher	Foss, Sam Walter
Conrad, Joseph	France, Anatole
Cook, George Cram	Franklin, Benjamin
Coolidge, Calvin	Freud, Sigmund
Cooper, James Fenimore	Frost, Robert
Cornell, Ezra	Gainsborough, Thomas
Crane, Nathalia	Gale, Zona
Crane, Stephen	Gallieni, Joseph Simon
Crawford, Francis Marion	Galsworthy, John
Crèvecoeur, J. Hector St. John de	Gandhi, Mahatma
Crothers, Rachel	Garland, Hamlin

- Gary, Elbert  
 Gillilan, Strickland  
 Glasgow, Ellen  
 Glaspell, Susan  
 Glass, Montague  
 Goethe, Johann von  
 Goldsmith, Oliver  
 Gosse, Edmund  
 Guest, Edgar  
 Haggard, Sir Henry Rider  
 Hale, Edward Everett  
 Hale, Nathan  
 Halliburton, Dick  
 Hamilton, Alexander  
 Hampden, Walter  
 Handel, Georg Friedrich  
 Hardy, Thomas  
 Harris, Corra  
 Harrison, Benjamin  
 Harte, Bret  
 Hauptmann, Gerhart  
 Hawthorne, Nathaniel  
 Henry, O.  
 Henry, Patrick  
 Herbert, Victor  
 Herford, Oliver  
 Hergesheimer, Joseph  
 Hermine, Princess of Reuss  
 Heyward, Du Bose  
 Hindenburg, Paul von  
 Hofmann, Josef  
 Hohenzollern, Wilhelm  
 Holmes, Oliver Wendell  
 Holt, Henry  
 Hoover, Herbert  
 Howe, Julia Ward  
 Howells, William Dean  
 Hubbard, Elbert  
 Hudson, Dr. Jay William  
 Hughes, Charles Evans  
 Hughes, Rupert  
 Hugo, Victor  
 Hurst, Fannie  
 Hutchinson, Anne  
 Hutchinson, A. S. M.  
 Hutchinson, Percy A.  
 Ibáñez, Vicente Blasco  
 Ibsen, Henrik  
 Irving, Washington  
 Jackson, Andrew  
 Jackson, Helen Hunt  
 Jackson, Stonewall  
 James, Henry  
 James, Jesse  
 Jefferson, Thomas  
 Joan of Arc  
 Joffre, Joseph  
 Johnson, Andrew  
 Johnson, Samuel  
 Keats, John  
 Kellermann, Annette  
 Kemal Pasha, Mustapha  
 Kidd, William (Captain)  
 Kipling, Rudyard  
 Kirk, Prof. John R.  
 Kokoschka, Oscar  
 Kummer, Clare  
 Lafayette, Marquis de  
 Landis, Kenesaw Mountain  
 Landor, Walter Savage  
 Lardner, Ring  
 Lauder, Harry  
 Lawrence, Thomas Edward  
 Lea, Fanny Heaslip  
 Lee, Joseph  
 Lee, Robert E.  
 Lenin, Nikolai  
 Lewis, Sinclair  
 Lieurance, Thurlow  
 Lincoln, Abraham  
 Lincoln, Robert Todd  
 Lindbergh, Charles A.  
 Lind, Jenny  
 Lindsay, Vachel  
 Livingstone, David  
 Longfellow, Henry Wadsworth  
 Longworth, Alice Roosevelt  
 Longworth, Nicholas  
 Lowell, Amy  
 Lowell, James Russell  
 Luckner, Felix von  
 Ludwig, Emil  
 Macaulay, Rose  
 MacDonald, J. Ramsay  
 MacDowell, Edward  
 McGuffey, William Holmes  
 McIntyre, O. O.  
 Maeterlinck, Maurice  
 Manet, Edouard  
 Mare, Walter de la  
 Markham, Edwin  
 Marquis, Don

Masefield, John	Petrarch, Francis
Masters, Edgar Lee	Pike, Zebulon Montgomery
Mather, Cotton	Poe, Edgar Allan
Matisse, Henri	Poincaré, Raymond
Maurice, Arthur Bartlett	Porter, Gene Stratton
Maurois, André	Pound, Ezra
Maxim, Hudson	Preston, Keith
Mayo, Katherine	Puccini, Giacomo
Mellon, Andrew W.	Quick, Herbert
Mencken, H. L.	Reed, James A.
Meredith, George	Reinhardt, Max
Michelson, Albert A.	Repplier, Agnes
Millay, Edna St. Vincent	Revere, Paul
Miller, Joaquin	Riley, James Whitcomb
Miller, Nellie B.	Rinehart, Mary Roberts
Mills, Enos A.	Ripley, William Z.
Milton, John	Ritchie, Albert Cabell
Mirabeau, Count de	Robinson, Edwin Arlington
Moffat, David H.	Roche, Mazo de la
Molnar, Ferenc	Rogers, Will
Montaigne, Michel Eyquem de	Roosevelt, Theodore
Morgan, J. Pierpont	Rosetti, Dante Gabriel
Morley, Christopher	Rubens, Peter Paul
Morris, William	Ruskin, John
Muir, John	Russell, George
Munsey, Frank A.	St. Francis
Mussolini, Benito	Salvi, Alberto
Mussolini, Donna Rachele	Sandburg, Carl
Napoleon Bonaparte	Sarett, Lew
Nation, Carrie	Sarg, Tony
Neihardt, John G.	Schumann, Robert
Newton, Sir Isaac	Schumann-Heink, Madame
Nexo, Martin Anderson	Scott, Sir Walter
Nicholson, Meredith	Sedgwick, Anne Douglas
Norris, Charles G.	Sembrich, Mme. Marcella
Norris, Kathleen	Sevier, John
Noyes, Alfred	Shaw, George Bernard
Obregón, Alvaro	Shelby, Gen. Jo. O.
O'Neill, Eugene	Shelley, Percy Bysshe
O'Neill, Rose	Sheridan, Richard Brinsley
Oppenheim, James	Short, William
Ostenso, Martha	Sinclair, May
Paine, Thomas	Sinclair, Upton
Parrish, Anne	Smith, Alfred Aloysius
Pasteur, Louis	Smith, Alfred E.
Paul, Oom	Sousa, John Philip
Peary, Rear Admiral Robert E.	Standish, Miles
Pennell, Joseph	Stanton, Frank L.
Perrault, Charles	Statler, Ellsworth Milton
Pershing, John J.	Steele, Wilbur Daniel
Pestalozzi, Henry	Sterling, George

Stevens, John	Wallace, Lew
Stevenson, Robert Louis	Walpole, Hugh
Stillman, James Alexander	Washington, George
Stone, Fred	Washington, Martha
Stowe, Harriet Beecher	Webster, Daniel
Stribling, T. S.	Webster, Noah
Strindberg, August	Wells, H. G.
Swift, Jonathan	Wescott, Glenway
Swinnerton, Frank	Wharton, Edith
Taft, William Howard	Whitman, Walt
Tagore, Rabindranath	Whittier, John Greenleaf
Talley, Marion	Wiggin, Kate Douglas
Talleyrand, Charles Maurice de	Wilde, Oscar
Tarkington, Booth	Willard, Frances E.
Tchekhov, Anton	Williams, Roger
Teasdale, Sara	Wills, Helen
Tennyson, Alfred	Wilson, Woodrow
Thackeray, William M.	Wodehouse, Grenville
Thompson, Silvia	Wolfe, Humbert
Thoreau, Henry David	Wren, Percival Christopher
Tilden, Samuel Jones	Wright, Harold Bell
Tolstoi, Leo	Wylie, Elinor
Towne, Charles Hanson	Yeats, William Butler
Tully, Jim	Yezierska, Anzia
Twain, Mark	York, Alvin C. (Sergeant)
Untermeyer, Louis	Young, Brigham
Van Dyke, Henry	Zangwill, Israel
Verne, Jules	Ziegfeld, Florenz
Voltaire, François	Zukor, Adolph
Wagner, Richard	

### CLUB PROGRAM OUTLINES

The question as to what shall constitute the program of study for clubs is a most difficult one. Club leaders agree that study programs should meet the needs of everyday life and yet should be so arranged as to provide for intelligent and broad research work.

With these needs in mind, certain outlines have been prepared by the Extension Division for the purpose of aiding clubs in forming programs for yearbooks. The outlines have proved popular with the clubs. The subjects are varied and any type of club will find helpful suggestions from these program outlines.

The book references in the outlines may be borrowed from the University Extension Library, or from the State Library Commission at Jefferson City, Missouri. The Package Library Service will supply magazine clippings to supplement the outlines.

Requests for reference material should be made at least two weeks before the material is desired. All requests will be given careful attention but we do not guarantee to furnish adequate material. We are glad, however, to do all we can to supply any information requested.

## CLUB STUDY PROGRAMS

American Fiction	Modern Drama
American Literature	Music
American One-Act Plays	Naturalization
American Painting	Naturalization and Citizenship
Americanization	Child Welfare
Books of the Year	Club Organization
First Year's Work in Systematic Study of the Bible	Current Problems
Government and Civics	English Fiction
The Home	Essentials of Government
Home Economics	Public Welfare
1. Art in Every-Day Life	Second Year's Work in Bible Study
2. Family and its Members.	The Short Story
3. Family Finance.	Some Problems of Citizenship
4. Food and Nutrition.	Studies in Citizenship
5. Fine Art of Living.	Study in the History of Contemporary Europe
6. Home Management.	Study of Shakespeare
Industrial and Social Conditions	The South in Contemporary Literature
Later Italian Painting	Travel and Literature in U. S. and Her Possessions
Miscellaneous Club Outlines	The United States and World Politics
Missouri Education	World Peace
Missouri History	
Missouri Literature	

## HIGH SCHOOL DEBATING LEAGUE

The Missouri High School Debating League was organized in May 1914 by the Extension Division of the University. Any high school in the state which is on the accredited list of the University of Missouri is urged to join the Debating League. The contests held between the various schools composing the league is an incentive for the best work in debating.

Packages of debating material are sent out through this office. The packages are furnished free of charge, except for cost of transportation. Material is included on both the affirmative and negative sides of the question concerned. Packages are lent for a definite period and must not be kept longer than the time for which the loan is made. Only one package on a particular subject is sent to each school, and only one subject is sent out at a time, unless the supply of material exceeds the demands of the schools. When the debating material is not in use in high schools, it is available for club and community use.

Packages are now available on the following subjects:

1. Child Labor
2. Commission-Manager Plan of City Government
3. Compulsory Arbitration
4. Government Ownership of Coal Mines
5. Government Ownership of Railroads
6. Merchant Marine
7. Minimum Wage
8. National Labor Party
9. Open and Closed Shop
10. Permanent Court of International Justice

11. Philippine Independence
12. Proposed Federal Educational Bill.
13. English Cabinet System of Legislation vs. U. S. Committee System

In addition to the packages listed, debaters may use the regular Package Library Service.

The packages of debating material on the question debated by the league are reserved until November 1 each year for the schools joining the league. After that date, packages not in use may be borrowed by schools not belonging to the league.

### DRAMATICS

The Play and Recitation Service of the Department of Public Information aims to supply suitable plays and recitations for the schools of the state—to assist high school principals, teachers, rural schools, dramatic societies, or any individual in securing good plays and recitations quickly and at a small cost rather than having to go to the expense of buying many plays from which to select. This service endeavors to secure the best plays and recitations available for school use.

### SELECTION OF A PLAY

In writing for advice or for plays the following information should be given to obtain the best service:

1. For what purpose the play is to be used.
2. Type of play desired.
3. Length of play.
4. Approximate number of characters; boys, girls.
5. Whether play is to be given by adults or children.

### RULES GOVERNING THE SERVICE

Because of meager funds available for Extension work a charge is made for the play service as follows:

2 plays or less at one time, 10 cents minimum charge plus postage. Anything above 2 plays, 25 cents maximum charge plus postage.

If check is sent make payable to University of Missouri.

Plays are lent for one week, the loan being renewable on request in case there is no waiting list for the same.

Not more than six plays will be sent to one person at a time.

The Extension Division should be reimbursed for all postage expended. The plays are to be used merely for purposes of selection. Any copies needed for production should be ordered direct from the publishers, which are listed on the last page of this bulletin.

## ONE-ACT PLAYS

The letters m. and w. as used in this bulletin to indicate sex of characters cannot, of course, suggest age. Often w., meaning women, refers to a girl or girls of 'teen age.

**About Face**, by Phoebe Hoffman. Comedy. 3w. 1 interior, a girl's studio. A woman who thinks she is in love with another's husband, in a wave of sympathy, turns the wife about face and instructs her in the gentle art of holding husbands. Time, 15 min. Longmans, Green.

**The Acid Test**, by Mrs. C. P. Smith. Comedy. 2w. Two women have known each other for years. All is perfect until— We leave it to you to find out why the good ship "Amicability" was wrecked forever and a day. Time, 20 min. Youmans.

**After the Honeymoon**, by Wallace Nisbet. 2 m., 3 w. 1 plain interior scene. An entertaining sketch, easy to stage and easy to play. A bundle of letters in the wrong hands causes all the amusement and all the trouble. Time, 50 min. Fitzgerald.

**Allison's Lad**, by Beulah Marie Dix. In "Plays for Classroom Interpretation" and "Allison's Lad and Other Martial Interludes." 6 m. Serious play, depicting stirring episodes of medieval wars. Time, 30 min. Henry Holt.

**All On a Summer's Day**, by Lindsey Barbee. 4 m., 6 w. A bride and groom wish to disguise the fact that they are newly married. They so overplay the part that they are mistaken for a pair of thieves. Full of action, and amusing. Time, 40 min. Denison.

**America Passes by**, by Kenneth Andrews. In "Harvard Plays." 2 m., 2w. Comedy. A love affair that flourished in the romantic atmosphere of Japan, but withers in prosaic Chicago. Brentano's.

**Among Thieves**, by William Gillette. In "One-Act Plays for Stage and Study," 2nd series. 2 m., 1 w. A moving play about miners in the west. Time, 35 min. Royalty \$10.00. French.

**And There Was Light**, by Charles O'Brien Kennedy. In "One-Act Plays for Stage and Study," 2nd series. 1 m., 3 w. A doctor and his fiancée teach a wealthy spoiled woman a little lesson in life. Time, 30 min. Royalty, \$10.00. French.

**Apache**, by Charles Merc. 3 m., 3 w. A melodrama. One dilapidated parlor set "Apache" should make a strong appeal to those groups that occasionally like to do the melodrama. Well written and unusual. Not for school groups. Longmans, Green.

**April Fools**, by W. F. Chapman. 3 m. Farce. No scenery required. For a half hour of roaring fun this farce has few equals. Dramatic.

**Aroused at Last**, by Mary Kyle Dallas. 4 m., 4 w. Comedy. One parlor scene. Full of brisk action and lively dialogue. About 40 min. Dramatic.

**Ashes of Roses**, by Constance D'Arcy Mackay, from "Beau of Bath and Other One-Act Plays." 2 m., 3 w. Poetic drama. Scene: the theater dressing-room of Kitty Clive, reigning actress and friend of Horace Walpole, who makes a sacrifice. Time, 20 min. Holt.

**At the Junction**, by C. S. Bird. 3 m., 2 w. Farce. Two cousins race to see which can get married first in order to inherit a fortune. Time, 55 min. Baker.

**At the Telephone**, by André de Lorde, in "One-Act Plays for Stage and Study," 2nd series. 6 m. 3 w. Melodrama. 2 interiors. Probably the most famous example of the Grand Guignol "thriller". Time, 1 hour. Royalty, \$10.00. French.



- Attuned**, by Alice Gerstenberg. In "Ten One-Act Plays." 1 w. Monologue. Time, 20 min. Longmans, Green.
- Aunt Dinah's Quilting Party**, by Bettine K. Phillips. 5 m., 11 w. Any number of boys and girls. This is a country village entertainment introducing well-known types, such as old maid, deacon, bad boy, village gossip, etc. Local hits may be introduced. Songs and specialties may extend the entertainment to play a whole evening. Fitzgerald.
- Aunt Harriet's Night Out**, by Ragna B. Eskil. 1 m., 2 w. Comedy. A young playwright and his wife are preparing to go to the first performance of his play. They are embarrassed by the arrival of Aunt Harriet, who controls the purse strings of their income and who is supposed to dislike the stage. Denison.
- Aunt Nancy's Account of a Fashionable Parlor Recital**, by Mary M. Boynton. 1 w. Monologue. Time, 15 min. Youmans.
- The Bachelor's Club**, by Effie W. Merriman. A burlesque entertainment for 13 m. Interior scene or may be given on any platform. It provides a most popular and amusing entertainment for those who desire something for men only. Time, 1 hour. Dramatic.
- Back of The Ballot**, by George Middleton. 4 m., 1 w. 1 interior. A woman suffrage farce written "frankly for propaganda and fun." Time, 20 min. Royalty on application. French.
- The Bank Account**, by Howard Brock, from "Harvard Plays." 1 m., 2 w. Time, 30 min. Brentano's.
- Barbara**, by Jerome K. Jerome. 2 m., 2 w. A dramatic episode of great power. Time, 50 min. French.
- The Bargain Counter**, by C. Moody. 5 w. A farce in 3 scenes. Light and clever. Time, 30 min. Baker.
- The Bathroom Door**, by Gertrude E. Jennings. 3 m., 3 w. A strong comedy of situations. Time, 20 min. Royalty \$5. French.
- The Beau of Bath**, by Constance D'Arcy Mackay, in "Beau of Bath and Other One-Act Plays." 2 m., 1 w. Costumes of the 18th century. A drama in verse about Beau Nash. Poetic and effective. Royalty on application. Henry Holt.
- Bedroom Suite**, by Christopher Morley. In "One-Act Plays" by Morley. 2 m. 1 w. An amusing comedy. The scene is a show-window in a department store. Time, 30 min. Doubleday, Page.
- Before Breakfast**, by Eugene G. O' Neill. 1 m. (not seen), 1 w. In "A Treasury of Plays for Women." The tragedy of an unhappy marriage. Time, 30 min. Royalty on application. Longmans, Green.
- Before the Play Begins**, by Georgia Earle. 2 m., 1 w. Scenery not essential. Rehearsal of love scene in an amateur play is the basis of this clever comedy. Ideal for school or drawing room. Time, 15 min. Denison.
- Benjamin, Benny and Ben**, by Anthony E. Wills. 8 m., 4 w. A farce. Ben Craft strangely disappears. He is assumed to have been lost, though search continues. To reassure his wife, two persons, unknown to each other, determine to impersonate him but to their dismay he returns. Uproariously funny. Time, 1 hour. Fitzgerald.
- Be Sociable**, by W. A. Stigler, 6 m., 4 w. Comedy of unusual ability. Time, 45 min. Royalty, \$2.50. Copies of parts furnished on payment of royalty fee. National Drama.
- Between The Soap And The Savory**, by Gertrude Jennings. 3 w. 1 interior. The little kitchen maid, jeered at because of the improbability of her ever having

- a young man, at last pretends she has a love affair and reads a borrowed love-letter to support her claim. Time, 30 min. Royalty, \$5. French.
- Beyond**, by Alice Gerstenberg. In "Ten One-Act Plays". 1 w. Monologue. The spirit of a woman wanders through space seeking the great answer of what is "beyond". Time, 15 min. Royalty, \$5.00. Longmans, Green.
- Billie's First Love**, by Grace Griswold. 1 m., 2 w. A comedy-drama. Interior scene. An artist's studio and the Bohemian atmosphere furnish the ingredients of this romantic play. Time, 30 min. Royalty, \$5.00., French.
- The Bishop's Candlesticks**, by Norman McKinnel. 3 m. 2 w. Costumes, French, about 1800. A dramatization of an incident in Victor Hugo's "Les Misérables". Time, 30 min. Royalty, \$5.00. French.
- The Blackball**, by Annie Steger Winston. 7 w., with extras if desired. Comedy. The pompous leader of the Colonial Captives blackballs her own candidate for membership in the exclusive society. Time, 20 min. Royalty, \$5.00. Longmans, Green.
- Blackberryin'**, by Howard Forman Smith. In "A Treasury of Plays for Women". 5 w. A unique and amusing comedy of the berry fields. Time, 20 min. Royalty, \$5.00. Longmans, Green.
- The Black Bottle**, by Seumas O'Brien. In "One-Act Plays for Stage and Study". 4 m., 2 w. A delightful Irish folk comedy. Time 40 min. Royalty. \$5.00. French.
- The Boor**, by Anton Tchekoff. 2 m., 1 interior. Costumes modern or Russian. It is concerned with Russian characters, and portrays with masterly skill the comic side of country life. One of the most rollicking plays ever written. Time, 30 min. French.
- Box and Cox**, by J. M. Morton. 2 m., 1 w. Farce. Scene, plain lodgings. Time, 35 min. Fitzgerald.
- The Bracelet**, by Alfred Sutro. 3 m. 5 w. A serious drama of modern society, especially suited to advanced amateurs. Time, 30 min. Royalty, \$5.00. French.
- Brain Waves**, by Le Roy Phillips. 1 m., 2 w. Comedy. Humorous meeting in which characters do not address one another directly. Time, 20 min. Baker.
- Bridges**, by Clare Kummer. 2 m., 1 w. 1 interior. A delightful comedy and especially well adapted to the use of high schools, clubs and little theaters. Royalty, \$15.00. Plays 30 min. French.
- The Broken-Hearted Club**, by J. Stirling Coyne. 4 m., 8 w. A comedietta. Scene, a parlor. A laughable satire on woman's rights. Plays 30 min. Dramatic.
- Brothers**, by Lewis Beach, from "Four One-Act Plays." 3 m. Scene, interior. A "Sardonic Comedy", very dramatic sketch. Plays 30 min. Royalty, \$10.00. Brentano's.
- Brothers**, by Richard Burton. 2 m. 1 w. Shows a struggle over a woman, and the nobility of a tramp in contrast with his successful brother. Royalty, \$5.00. French.
- The Buffer**, by Alice Gerstenberg. In "Ten-One Act Plays". 2 m. 3 w. 1 child. A drama showing the effect upon a child when parents are mismated. Time, 20 min. Royalty, \$5.00. Longmans, Green.
- By Ourselves**, by Ludwig Fulda, from "Short Plays by Representative Authors." 3 m., 2 w. Scenes, interior. Plays about 1 hour. Royalty on application. Macmillan.

- The Cajun**, by Ada Jack Carver. 4 m., 2 w. Costumes, 1900 styles. A drama which is a serious study of the descendants of the exiled Acadians. Time, 35 min. Royalty, \$10.00. French.
- Caleb Stone's Death Watch**, by Martin Flavin. 6 m., 4 w. A grimly amusing satire revealing the thoughts of a family around the death-bed of an old man. Time, 45 min. Royalty, \$10.00. French.
- The Captain of the Gate**, by Beulah Marie Dix. In "Allison's Lad and Other Martial Interludes." 6 m. A drama depicting an event of the Cromwellian invasion of Ireland. Time, 40 min. Holt.
- The Cast Rehearses**, by Alice Tildesley. 5 w. Interior. Phyllis, who is to take part in a play, has planned to elope with Dr. Nick. The cast rehearses at the home of Phyllis. Phyllis loses her letter of introduction from Dr. Nick and it is found by one of the girls who thinks it is the letter which she is to read in playing her part. The secret out, excitement reigns and all the girls help in the elopement. Time, 30 min. Youmans.
- The China Pig**, by Evelyn Emig. In "A Treasury of Plays for Women." 3 w. drama in which a lesson of life is discovered. Time, 30 min. Longmans, Green.
- Chinese Love**, by Clare Kummer. 4 m., 2 w. 1 exterior. Chinese costumes. A delightful little Chinese play for audiences of all ages. Time, 25 min. French.
- City Rubes**, by Henry Bailey Stevens. 4 m., 1 w. A comedy especially adapted to rural clubs and communities. Time, 40 min. University of New Hampshire Extension Service.
- Claude**, by Hermon Ould. In "One-Act Plays for Stage and Study," second series 3 m. 1 w. Comedy of stage life revealing the cleverness of an actor whom the rest of the company considers "impossible". Time 35 min. Royalty \$5.00. French.
- "Clavers 'll Git Ye,"** by Townsend Godsey. 3 m., 3 w. A Missouri folk play of the Ozark regions. Time, 30 min. Royalty, \$3. Townsend Godsey. King City, Mo.
- The Clod**, by Lewis Beach, from "Four One-Act Plays." 4 m., 1 w. 1 interior. Drama. Civil War Costumes. "The Clod" has been, ever since its production by the Washington Square Players, a little theatre classic. Time, 40 min. Royalty, \$10.00. Brentano's.
- Columbine**, by Colin C. Clements. 2 w., one unseen. A fantasy well suited to amateur production. Time, 30 min. Royalty on application. Longmans, Green.
- The Conflict**, by Clarice McCauley. In "A Treasury of Plays for Women." 1 m., 3 w. Somewhat tragic play of how a selfish mother-love tries to direct a girl's life. Time, 40 min. Royalty on application. Longmans, Green.
- Compromising Martha**, by Keble Howard. 1 m. 3 w. A costume comedy wherein Martha (aged 87) is compromised by being kissed by the curate. Time, 30 min. Royalty, \$5.00. French.
- The Constant Lover**, by St. John Hankin. 1 m. 1 w. A charming pastoral comedy of modern life. Time, 40 min. Royalty, \$5.00. French.
- A Converted Suffragist**, by Katherine Kavanaugh. 3 w. A comedietta. An excellent opportunity for a clever dialect comedienne. Time, about 30 min. Fitzgerald.
- Copy**, by Kendall Banning and Harold Kellock. 7 m. Simple interior office set; This play is based on the actual occurrence in a city news room when a "big story" came over the wire. Filled with action. Royalty, \$10.00. Longmans, Green.

- The Corsican Lieutenant**, by Robert Housum. In "One-Act Plays for Stage and Study", 2nd series. 6 m., 5 w. Costumes, 1786. A colorful comedy of France showing Napoleon before he was famous. The plot revolves about the youth's proposal to an elderly lady. Time, 50 min. Royalty, \$10.00. French.
- Counsel Retained**, by Constance D'Arcy Mackay, from "The Beau of Bath and Other One-Act Plays." 5 m. Comedy. Scene: Apartment of Edmund Burke. Costumes, English, about 1750. Time, about 30 min. Henry Holt.
- Crabbed Youth and Age**, by Lennox Robinson. 3 m., 4 w. A charming comedy with exceptional opportunities for effective acting. Time, 30 min. Royalty, \$10.00. French.
- The Crimson Lake**, by Alice Brown, from "One-Act Plays." 8 m. Scene: Interior of the Crimson Lake, an aggressive, crude Bohemian restaurant. Plays about 45 min. Macmillan.
- The Crowning Glory**, by Edna A. Collamore. 1 m., 5 w. Kitchen interior. Miss Emily spends the birthday money given her by her nephew for the gay hat she has craved since her drab girlhood. It is a mail order hat and her critics find it ridiculous. Her nephew's tactful sweetheart saves the hat and the situation. Suitable for women's clubs, church organizations, or summer colonies. Time, 25 min. Baker.
- A Cup of Coffee**, by Dorothy Reynartz. 8 w. A comedy. Scene, a sitting room. Matilda receives some genuine Mocha coffee from a friend. She at once has some prepared but is prevented from enjoying it by a succession of annoying callers. Time, 40 min. Youmans.
- The Dark of the Dawn**, by Beulah Dix. In "Allison's Lad and Other Martial Interludes." 4 m. A drama in which an instance of the thirty years war is depicted. Royalty on application. Holt.
- Daughter-in Law**, by Mary Seymour. 4 w. A comedietta. Scene, interior. Very refined but spirited. Time, 30 min. Dramatic.
- A Day in Court**, by J. C. Powers. 9 m., 5 w. Burlesque. Scenery, unimportant. Judge Mackenfuss "sits" through a sample court morning enlivened by various humorous incidents and ending with a "colored" wedding. Very lively and funny. Time, 20 min. Baker.
- The Dear Departed**, by Stanley Houghton. 3 m., 3 w. A clever dramatization of a famous De Maupassant story. Time, 30 min. Royalty, \$5.00. French.
- The Death of Tintagiles**, by Maurice Maeterlinck, in "A Treasury of Plays for Women." 1 m., 6 w. A short drama in five scenes, treating of mystic tragedy. Time, 40 min. Royalty on application. Longmans, Green.
- Deceivers**, by William C. de Mille. 2 m., 1 w. A comedy in which a jealous woman both learns and teaches a lesson. Time, 25 min. Royalty \$5.00. French.
- The Delicate Child**, by Maurice Gee and Helen McIntyre. 4 w. An appealing play with many touches of humor and a moral behind it all. Time, 20 min. French.
- The Dickey Bird**, by Harvey O'Higgins and Harriet Ford. In "One-Act Plays for Stage and Study", 2nd series. 1 m., 3 w. An amusing comedy in which a man takes his second wife to look at a flat and finds that the person who wishes to rent it is his first wife. Time, 35 min. Royalty, \$10.00. French.
- Dinner at Seven Sharp**, by A. and T. Jenks. 5 m., 3 w. A comedy. Beverly, a patent-lawyer, custodian of certain papers important to a rival of the Electric Company that he represents, baffles, after an exciting experience, an emissary of his opponents, who is in his own employ disguised as an English butler. Time, 40 min. Baker.

- Doctor Auntie**, by Alice Brown, from "One-Act Plays." 2 m., 2 w. Scene, a pleasantly furnished sitting room. Time, about 30 min. Macmillan.
- Dolly's Little Bills**, by Henry Jones. In "One-Act Plays for Stage and Study", 1st series. 2 m., 1 w. Comedy. A special version, by the author of the famous hill scene from "Dolly Reforming Herself". Time, 30 min. Royalty, \$10.00. French.
- Do Men Gossip?**, by Orrin A. Breiby. 5 m., 1 w. One of the members of a men's club insists that men never gossip, and to prove it gossips worse than anyone. Time, 25 min. French.
- Double Crossed**, by C. C. Mather. 3 m., 3 w. Scene, interior. An amusing play of a boy who could not decide which of two girls he wanted to marry and when he proposed to both in turn, was surprised to be rejected by both. He is later accepted by each of the girls. Time, 30 min. Baker.
- The Drums of Oude**, by Austin Strong. In "One-Act Plays for Stage and Study", 2nd series. 7 m., 1 w. Hindu servants' costumes, 1857, and British military. An uprising of the natives in India. A thrilling romance. Time, 50 min. Royalty, \$10.00. French.
- The Dying Wife**, by Laurette Taylor. In "One-Act Plays for Stage and Study", 1st series. 1 m., 1 w. A melodramatic episode. Time, 10 min. Royalty, \$10.00. French.
- Early Ohios and Rhode Island Reds**, by Mary K. Reely. 2 m., 3 w. A play depicting rural life. Especially adapted to farm clubs. Time, 30 min. Perine.
- East of Eden**, by Christopher Morley. In "One-Act Plays." 2 m., 2 w., 1 baby. A travesty based on the fourth chapter of Genesis. Royalty, \$10.00. Double-day, Page.
- El Cristo**, by Margaret Larkin. 4 m., 2 w. A colorful drama based on the strange and interesting customs of a secret religious sect. For advanced amateur groups. Time, 20 min. Royalty, \$10.00. French.
- Enter the Hero**, by Theresa Helburn. In "Twelve Plays." 1 m., 3 w. Interior scene. A charming and very human comedy concerned with the efforts of a girl to invent a suitor for herself and of the discovery of the forgivable deceit. Popular with schools and little theaters. Time, 40 min. Royalty on application. Holt.
- Everybody's Husband**, by Gilbert Cannan. 1 m., 5 w. Costumes of several periods. An effective fantasy of modern life in which a romantic girl finds the average husband under the mask of a lover. Royalty on application. Huebsch.
- Ever Young**, by Alice Gerstenberg. In "A Treasury of Plays for Women." 4 w. A bit of satire a woman's club will keenly enjoy. Longmans, Green.
- Everystudent**, by Edith Everett. 9 m., 8 w., or 14 m., 13 w. A modern morality play. Costumes easy. Scene, student's room. Depicts trials and temptations of student life. Well arranged, humorous. Popular for commencement. Time, 1 hour. Flanagan.
- Family Reunion**, by Elia W. Peattie, from "The Wander Weed and Seven Other Little Theater Plays." 4 m., 3 w. Royalty, \$5.00. Time, about 30 min. Sergel.
- Feed the Brute**, by George Paston. 1 m., 2 w. The human side of a conversation between a rough laborer, and his good-tempered wife, an ex-cook. Time 30 min. Royalty, \$5.00. French.
- The Fever Ward**, by Franz Rickaby. 4 m., 2 w. Comedy. Three business men take a rest cure in a sanatorium. Given a flirtations doctor and a pretty nurse—what more is needed for a very farcical, four-cornered comedy? A delightfully wholesome play. Baker.

- Figureheads**, by Louise Saunders. In "Magic Lanterns." 3 m., 2 w. An amusing satire on feminine nature. Time 20 min. Royalty \$10.00. Scribner's.
- Finders-Keepers**, by George Kelly. 1 m., 2 w. 1 interior. Struggle between a husband and his wife over some money which she has found and decides to keep. The loser is a neighbor and the husband finally refunds the money out of his own pocket. An interesting problem in ethics. Royalty on application. D. Appleton Co.
- The Flattering Word**, by George Kelly. In "The Flattering Word and Other One-Act Plays." 2 m., 3 w. A satire showing the power of flattery on a narrow and prejudiced mind. Time, 30 min. Royalty, \$10.00 French.
- Flirtation Cured**, by Francis Lester. 5 m. Farce comedy of unusual humor. Time, 25 min. Dramatic.
- The Florist Shop**, by Winifred Hawkrigde. In "Harvard Plays." 3 m., 2 w. A charming comedy of the matchmaking of a florist bookkeeper. Royalty on application. Brentanos.
- A Flower of Yeddo**, by Victor Mapes. 1 m., 3 w. Japanese costumes. A Japanese comedy which can be produced either indoors or out. Time, 30 min. Royalty, \$5.00. French.
- Followers**, by Harold Brighthouse. 1 m., 3 w. Comedy in which there is an excellent opportunity for character work in the part of Miss Barnes who realizes too late her mistake in sending away her sweetheart. Royalty on application. French.
- For Distinguished Service**, by Florence Clay Knox. In "A Treasury of Plays for Women." 3 w. A comedy in which a love triangle is developed. Provides for unusual insight into feminine characters. Time, 20 min. Royalty, \$10.00 Longmans, Green.
- The Forfeit**, by T. B. Rogers, from "Twelve Plays," edited by Knickerbocker. 3m., 2 w. A drama. Scene, interior of office. Good plot. Time, 45 min. Royalty on application. Holt.
- For the Love of Pete**, by Hettie F. Cattell. 3 w. "Pete" is a grandmother, so nicknamed in affectionate disrespect by her grandchild, Patricia. There is little plot but exceptional dialogue. Time, 12 min. Royalty, \$5.00. Longmans, Green.
- Forty Miles an Hour**, by C. D. Gilpatric. 4 m., 3 w. A subtle, light comedy in which Peggy Radley gets in the traffic court on the charge of speeding. Time, 50 min. Baker.
- Fourteen**, by Alice Gerstenberg. In "Ten One-Act Plays." 2 w., 1 m. A comedy in which a hostess rearranges her dinner party as the expected guests disappoint her, until she is quite distracted. Time, 20 min. Royalty, \$10.00 Longmans, Green.
- Free Speech**, by William L. Prosser, from "Harvard Plays." 7 m. Prison scene somewhere in Russia. Costumes of Russian soldier and prisoner. Time, about 30 min. Royalty on application. Brentano's.
- French Without a Master**, by Tristan Bernard. 5 m., 2 w. A clever farce concerned with the difficulties of a bogus interpreter who does not know a word of French. Time, 50 min. French.
- Freezing a Mother-in-law**, by T. E. Pemberton. A farce. 3 m., 2 w. She was to be frozen by a new scientific process, but discovered the plot. Time, 45 min. Baker.
- Friends Invited**, by Ray Lee Jackson. 2 m., 3 w. Comedy. Scene, interior. A quaintly humorous character sketch from life in a small midwestern town. Portrays the funeral of a neighbor. Royalty \$5.00. French.

- The Game of Chess**, by Kenneth Sawyer Goodman, from "Twelve Plays," edited by Knickerbocker. 4 m. Scene, wainscoted room in the house of Alexis. Time, about 30 min. Holt.
- A Game of Chess**, by Alfred Sutro. 1 m., 1 w. A clever comedy and social satire. Time, 30 min. Royalty, \$5.00. French.
- A Gentle Jury**, by A. Bates. 1 m., 12 w. Scene, a plain room. A clever satire. A look forward into the future where mere man is but a puppet, entirely controlled by the "weaker" sex. Suited for use of women's clubs. Time, 30 min. Baker.
- The Ghost of Jerry Bundler**, by W. W. Jacobs and Charles Rock. 7 m. A tragic-comedy in which a number of friends tell ghost stories. One member dresses as a ghost to win a bet. The joke results almost tragically. Time, 30 minutes. Royalty, \$5.00. French.
- The Ghost Story**, by Booth Tarkington. 5 m., 5 w. A comedy of the mystic type with lots of thrills. Time, 45 min. Royalty quoted on application. D. Appleton and Co.
- The Girl**, by Edward Peple. 3 m. Drama. A strong situation wherein 2 men fight an exciting duel. The curtain falls on a most unexpected turn. Time, 30 min. Royalty, \$10.00. French.
- The Girl Who Paid the Bills**, by N. Rhoades. 2 m., 4 w. A clean, pretty and dramatic little comedy. Plays 35 min. Baker.
- Gloria Mundi**, by Patricia Brown. 2 m., 4 w. A masterpiece of grim irony. A sort of parable of life, laid in an insane asylum, showing the courage necessary to face the bitter realities of life. For little theatre groups. Time, 35 min. Royalty, \$10.00. French.
- God Winks**, by Katharine S. Burgess. 2 m., 2 w. A comedy of character in which a cup from which George Washington had drunk is kept out of the hands of a collector. Not recommended for schools, but will appeal to adult organizations for its acting possibilities. Royalty, \$10.00. Longmans, Green.
- The Golden Doom**, by Lord Dunsany, from "Plays for Classroom Interpretation," edited by Knickerbocker. 11 m., 1 w. Scene, outside the king's great door in Zericon. Costumes of some time before the fall of Babylon. Time, about 30 min. Royalty on application. Holt.
- Good Medicine**, by Jack Arnold and Edwin Burke. 1 m., 2 w. Farce-comedy. Plot centers around a young doctor who has just hung out his shingle. Royalty, \$10.00. Longmans, Green.
- The Good Men Do**, by Hubert Osborne, from "Harvard Plays." 3 m., 5 w. Costumes, English of 1616. Time, about 30 min. Brentano's.
- A Grand Evening**, by J. H. McMullen. 3 m., 2 w. A very entertaining play, especially adapted for use by schools. Time, 40 min. French.
- The Grapes Hang High**, by Mrs. Chauncey Palmer Smith. 4 w. A comedy. A play for and about women's clubs with a genuine idea underlying it, though the spirit is that of gaiety and good humor. Has been especially successful. Time, 25 min. French.
- The Great Delusion**, by Elia W. Peattie, from "Wander Weed and Seven Other Little Theater Plays." 4 m., 5 w. and other ladies and gentlemen. Time, about 30 min. Royalty, \$5.00. Sergel.
- Green Chartreuse**, by Chester Heywood. 3 m. A comedy of mystery, laughter, and a surprise finish. Time, 15 min. Royalty, \$10.00. French.

- Gretna Green**, by Constance D'Arcy Mackay, from "The Beau of Bath and Other One-Act Plays." 1 m., 2 w. Costumes, English, about 1772. Comedy. Time, about 30 min. Holt.
- The Groove**, by George Middleton. 2 w. An intimate half-hour with a younger and older sister, concerning the latter's desire to escape the monotony of her life in a small town. Royalty, \$5.00. French.
- A Guest for Dinner**, by Lewis Beach, in "Four One-Act Plays." 4 m. An effective dramatic sketch for men. Time, 30 min. Royalty, \$10. Brentano's.
- Hanging and Wiving**, by J. Hartley Manners. In "One-Act Plays for Stage and Study," 1st series. 1 m., 3 w. A domestic drama for advanced casts. Royalty, \$10.00. French.
- The Haunted Chamber**, by Grace Griswold. 2 m., 1 w. Romantic comedy. Costumes, modern and Second Empire. A very picturesque and effective play. Time, 45 min. Royalty, \$5.00. French.
- The Haunted Gate**, by Edyth M. Wormwood. 3 m. 7 w. A clever play for Halloween or any other time. The capture of ten ghosts furnishes a good climax to the play. Time, 30 to 45 min. Eldridge.
- The Heart of a Clown**, by Constance Powell Anderson. 2 m., 2 w. An autumn fantasy of a love tale of Harlequin and Columbine, with the scene laid in a village fair. Time, 30 min. Royalty, \$8.00. French.
- Hearts**, by Alice Gerstenberg. In "Ten One-Act Plays." 4 w. Requires no scenery. It comprises many fundamentals of stage deportment and emotion. Time, 20 min. Royalty, \$10.00. Longmans, Green.
- Henry, Where are You?**, by B. King. 1 m., 6 w. Uncle Henry is discovered living under the depressing rule of his sister Maria; but a strong rescuing party of charming nieces is recruited and by a clever mingling of force and strategy the enemy is defeated and Uncle Henry is married to a widow. Time, 30 min. Baker.
- Her Busy Day**, by J. R. Condrim. 7 m., 5 w., or may be doubled. A farce. A very funny piece depicting the troubles of an inexperienced housekeeper. Time, 1 hour. Baker.
- Her Country**, by Euphemia Van Rensselaer Wyatt. A tragedy. 2 m., 1 w. Scene, simple interior. Costumes, modern and military. This play won a prize in 1923 among the little theater groups of Connecticut. Not for schools. Royalty, \$10.00. Longmans, Green.
- Her Deaf Ear**, by A. Bates. 2 m., 3 w. A farce. Scenery, 1 easy interior. Time, 30 min. Baker.
- Her First Assignment**, by G. R. Bridgham. 10 w. "Billy" Gordon, a young lady reporter assigned to interview the great Mrs. Felensbee and finding that she is not coming to the function where she is expected, assumes her character to oblige the hostess, only to have the real Mrs. Felensbee turn up a little later. Time, 1 hour. Baker.
- Her Forgetful Husband**, by Charles Nevers Holmes. 1 m., 5 w. Comedy of family disturbance due to failure to remember the first wedding anniversary. Time, 30 min. Denison.
- The Hero**, by Alice Brown, from "One Act Plays." 3 or more men, 1 w. Scene, simple interior. Costumes, European fishermen, 1914. Macmillan.
- He Said and She Said**, by Alice Gerstenberg. In "Ten One-Act Plays." 1 m., 3 w. A comedy which shows in clever dialogue the growth of gossip from sentences unfinished. Time, 20 min. Royalty, \$10.00. Longmans, Green.



- His Methodist Foot**, by V. C. Criss. 3 m., 6 w. A farce. A book agent calling upon Mrs. Jones is mistaken for the new minister. Very lively and funny. Time, 20 min. Baker.
- The Host**, by Ferenc Molnar. In "One-Act Plays for Stage and Study," 2nd series. 6 m., 4 w. A happy and successful business man is unexpectedly arrested as a result of a trick played by his friends. Time, 30 min. Royalty, \$5.00. French.
- How He Lied to Her Husband**, by Bernard Shaw. In "The Man of Destiny." 2 m., 1 w. The theme of the eternal triangle is given an unexpected and thoroughly amusing treatment. Royalty on application. French.
- How the Ladies Earned Their Dollar**, by O. W. Gleason. 13 w. A burlesque of the Ladies Benevolent Society. Costumes, characteristic. Time, about 1¼ hours. Baker.
- How the Story Grew**, by O. W. Gleason. 8w. A very easy and amusing little piece full of human nature. Written for middle-aged women. Time, 45 min. Baker.
- The Hundredth Trick**, by Beulah Marie Dix. In "Allison's Lad and Other Martial Interludes." 4 m. A war play which is based on an incident in the latter years of the reign of Queen Elizabeth. Time, about 50 min. Royalty on application. Holt.
- Ici On Parle Francais**, by T. J. Williams. 3 m., 4 w. 1 interior scene. A farce in which Mr. Spriggins studies "French before breakfast", and displays "Ici On Parle Français" in his window, in order to catch lodgers from among the foreigners of distinction, who do not know the difference between a franc and a sovereign. Time, 45 min. Baker.
- The Idealist**, by Oliphant Down. In "One-Act Plays for Stage and Study," 2nd series. 2 m., 2 w. A clever comedy of characters satirical and romantic, about a man and a woman each of whom tries to deceive the other about his true feelings. Time, 35 min. Royalty, \$5.00. French.
- If Men Played Cards as Women Do**, by George S. Kaufman. 4 m. A brilliant satire for men. Time, 30 min. Royalty, \$5.00. French.
- The Illuminati in Drama Libre**, by Alice Gerstenberg. In "Ten One-Act Plays." 1 m., 1 w. A satire on cubist painting. Time, about 30 min. Longmans, Green.
- Indian Summer**, by Meilhac and Halevy. 2 m., 2 w. An easy and pretty little French comedy. Time, 30 min. French.
- In Honor Bound**, by Sidney Grundy. 2 m., 2 w. A romantic drama. Time, 40 min. Fitzgerald.
- An Interrupted Proposal**, by Arlo Bates. 3 m., 3 w. A comedy. Stephen Howard mistakes the home of the girl whom he had once rescued for that of his aunt. Time, 25 min. Baker.
- Jazz and Minuet**, by Ruth Giorloff. 2 m., 3 w. A romantic comedy suited to little theatre groups. Time, 30 min. Royalty, \$10.00. Longmans, Green.
- Job's Tears**, by Elia W. Peattie, from "Wander Weed and Seven Other Little Theater Plays." 4 m., 7 w. Chiefly a monologue. Royalty on application. Time, about 30 min. Sergel.
- Joint Owners in Spain**, by Alice Brown. 4 w. Comedy. Among the best of American short plays. Action amusing and interesting throughout. Royalty, \$5.00. Baker.
- Judge Lynch**, by J. W. Rogers, Jr. 2 m., 2 w. A tensely dramatic play with a lynching as background, in which we sense the tragedy of terror and horror that lies at the bottom of the soul of so-called civilized man. Time, 30 min. Royalty, \$10.00. French.

- Just a Little Mistake**, by E. Gale. 1 m., 5 w. A comedy based on confusion of characters. The cook is entertained as a guest, and the guest as the cook. Double interpretations add to the enjoyment of the play. Time, 40 min. Baker.
- King and Commoner**, by Louise Saunders. In "Magic Lanterns." 4 m., 3 w., heralds. Outdoor comedy. Medieval costumes. A royal son is brought up by peasant folk to the age of 18 in ignorance of his royal blood. Time, about 40 min. Scribner's.
- A Kiss in the Dark**, by John Baldwin Buckstone, from "Successful Plays." 2 m., 3 w. A popular farce, easy to produce and of high moral character. Time, 30 min. Flanagan.
- The Kleptomaniac**, by Margaret Cameron. 7 w. Farce-comedy based on a certain society matron's facility for losing or mislaying her valuables. Time, 45 min. French.
- The Knave of Hearts**, by Louise Saunders. 15 characters—all of which may be taken by girls. A fanciful costume comedy for children and grown-ups. The plot is a clever explanation of why the King of Hearts stole those famous tarts. Royalty, \$10.00. Longmans, Green.
- The Knife**, by Henry Arthur Jones. In "One-Act Plays for Stage and Study," 2nd series. 3 m., 2 w. A dramatic play about a surgeon who learns that his patient is in love with his wife. Time, 40 min. Royalty, \$10.00. French.
- Lady Fingers**, by Glenn Hughes. 4 w. Comedy. Although it is light and amusing, a real idea underlies its action. Especially good for girls' schools and colleges and women's clubs. Time, 30 min. Royalty, \$5.00. French.
- A Lady to Call**, by C. W. Pierce. 3 w. A comedy. Ann Bray and her sister attempt to become friends to a city "society" woman who has just taken a house near the village. Many ludicrous situations arise. Time, 20 min. Baker.
- The Land of Heart's Desire**, by W. B. Yeats. 3m., 3 w. Costumes, Irish peasant. A splendid drama for schools. Time, 30 min. Royalty, \$5.00. Baker.
- Learning to Eat Potatoes**, by Marie-Paula Dickorè. 3 scenes. 3 m. and others. A play of English rural life of 1577. University of Wisconsin.
- 'Lecture**, by E. P. Conkle. 5 m., 1 w. Comedy. The sketch has to do with a mountaineer who tries to change a ballot already cast, in order to elect himself constable. Time, 20 min. French.
- Lend Me Five Shillings**, by J. M. Morton. 3 m., 2 w. Farce. A ludicrous situation resulting from lack of funds. Time, 45 min. Baker.
- A Letter of Introduction**, by W. D. Howells. 3 m., 3 w. A light farce, based on satire. Easy to stage. Time, 45 min. French.
- Lima Beans**, by Alfred Kreymborg. 2 m., 1 w. Fantastic costumes. This is very actable and is a pretty fantastic comedy. Royalty, \$10.00. French.
- Little Ernie**, by W. A. Stigler. 8 m. Scene, back alley in poor section of New York. Costumes, working class. A drama introducing Scout principles. Time, about 45 min. Royalty, \$2.50. National Drama.
- The Little Father of the Wilderness**, by Austin Strong and Lloyd Osbourne. 6 m., 1 w., extras. Costumes, Louis XV. A pathetically humorous incident concerned with a missionary to America with Frontenac. Time, 35 min. Royalty, \$10.00. French.
- Little Owl**, by W. A. Stigler. 3 m., 2 w. Time, 30 min. Royalty, \$2.50. National Drama Co.
- The Little Rebel**, by J. Stirling Coyne. 4 m., 3 w. A farce with a strong leading part. Time, 45 min. Dramatic.

- The Locked Chest**, by John Masefield, from "Short Plays by Representative Authors." The Laxdaelasaga, from which the incident told in this drama is taken, describes events from the years 886 to 1030. It is one of the longest sagas and is remarkable for its skilful delineation of character. Royalty on application. Macmillan.
- Lonesome-Like**, by Harold Brighouse. 2 m., 2 w. Drama. Old Sarah Ormerod is threatened with the workhouse. A soft-hearted young man adopts the old lady as his mother. Time, 30 min. Royalty, \$5.00. French.
- Love Among the Lions**, by Lewis Beach, in "Four One-Act Plays." 2 m., 2 w. A farce employing satire on faddist musical people. Time, 30 min. Royalty, \$10. Brentano's.
- The Loving Cup**, by A. Brown, 4 m., 9 w. A comedy-drama. The loving cup that was intended to commemorate a birthday is adopted by its recipient to celebrate reconciliation after an estrangement. Ideally suited for women's clubs. Time, 30 min. Royalty, \$5.00. Baker.
- Malted Milk and Marcia**, by Carl W. Pierce. 3 m., 2 w. A comedy. Scene, office. Marcia answers an advertisement "Stenographer wanted. No flapper need apply," and gets position through a clever bit of impersonation. Time, 45 min. Youmans.
- Manikin and Minikin**, by Alfred Kreymborg. 1 m., 1 w. Comedy. Setting to represent a clock. 18th century costumes. A delicate poetic play and a favorite with amateur groups. Time, 25 min. Royalty, \$10.00. Longmans, Green.
- The Man in the Bowler Hat**, by A. A. Milne. Comedy. 3 m., 2 w. An exciting affair happens in the humdrum life of John and Mary. Time, 30 min. Royalty, \$10.00. French.
- The Man Next Door**, by Edwin Bateman Morris. 2 m., 2 w. Comedy. A telephone complication. A clever and amusing play. Penn.
- The Man of Destiny**, by Bernard Shaw. 4 m., 1 w. Romantic drama, the scene of which is in North Italy in May 1796. Depicts character of Napoleon. Time, about 1 hour. Royalty on application. Brentano's.
- The Man on the Kerb**, by Alfred Sutro. 1 m., 1 w. Drama. A dramatic domestic play in which a child causes parents to discard tragic plans. Time, about 20 min. Royalty, \$5.00. French.
- The Man Upstairs**, by Augustus Thomas. In "One-Act Plays for Stage and Study," 1st series. 2 m., 3 w. An amusing farce. A mixup of husbands and wives resulting from a mistake in apartments. Time, 40 min. Royalty, \$10.00. French.
- The Man Who Died at Twelve O'Clock**, by Paul Green. In "One-Act Plays for Stage and Study". 2nd series. 2 m., 1 w. An amusing folk comedy on negro life. Time, 30 min. Royalty, \$5.00. French.
- A March Wind**, by Alice Brown, from "One-Act Plays." 2 m., 1 w., 1 child. Costumes, rural. Time, about 30 min. Royalty on application. Macmillan.
- A Marriage Proposal**, by Anton Tchekoff, in "Twelve Plays." 2 m., 2 w. Costumes modern or Russian. This farce is very popular and amusing. Time, about 30 min. Holt or French.
- Marse Covington**, by George Ade. 5 m. Scene, a gambling-house. Marse Covington, a remnant of old aristocracy, is on the point of being put out. Old Uncle Dan, who was born on his father's plantation, saves the situation. Time, 30 min. Royalty \$5.00. French.
- Mary Means What She Says**, by J. W. Rogers, Jr. 4 m., 3 w. 1 interior. A "comedy on the decline of wives," a revelation of the longing of a farmer's

- wife to achieve economic and personal independence. An especially attractive play for amateurs. Time, 35 min. Royalty, \$5.00. French.
- The Mayor and the Manicure**, by George Ade. 2 m., 2 w. A small-town politician outwits a would-be blackmailer. Genuine characterization and the inimitable George Ade dialogue. Time, 30 min. Royalty, \$5.00. French.
- Meet the Missus**, by Kenyon Nicholson. In "One-Act Plays for Stage and Study." 2nd series. 1 m., 2 w. A realistic comedy laid in a cheap theatrical boarding-house. Time, 25 min. Royalty, \$5.00. French.
- The Merry Merry Cuckoo**, by Jeanette Marks, in "Short Plays by Representative Authors." 3 m., 2 w. Costumes, Welsh peasant. Comedy. A dying man longs to hear once more the voice of the cuckoo. His wife imitates the cuckoo's song. Humor comes in when the neighbors protest on moral grounds, sure that she is endangering her soul by the living lie. Royalty, \$10.00. Macmillan.
- A Midnight Intruder**, by Frank Dumont. 6 m., 1 w. The hunt for burglars scares the darkies out of their senses. Time, 20 min. Dramatic.
- Milly Dear**, by Alice Brown, in "One-Act Plays." 2 m., 2 w. Drama. Time, about 30 min. Macmillan.
- Minuet**, by Louis N. Parker. 2 m., 1 w. Costumes, French, period of The Terror. A bit of drama about an aristocratic nobleman, estranged from his wife, and the touching reunion that comes as both await a summons to the guillotine. Time, 20 min. Royalty, \$10.00. French.
- The Mirth-Provoking Schoolroom**, by Emily David. 6 m., 8 w. A farce representing the trials of a backwoods teacher for one eventful day. Time, 1 hour. Flanagan.
- Miss Civilization**, by Richard Harding Davis, 4 m., 1 w. Two burglars break into the house of a millionaire and are so disconcerted by the hospitable reception given them, that the daughter is able to amuse them until the police come and capture them. Time, 30 min. French.
- Miss Maria**, by Maude B. Vosburgh. Dramatized from Margaret Deland's "Old Chester Tales." 1 m., 4 w, 4 children. A comedy in which a middle-aged woman trustingly invests her money in a wild-cat scheme of her shiftless nephew. Time 1¼ hours. French.
- The Monkey's Paw**, by W. W. Jacobs. Dramatized by Louis N. Parker. 4 m., 1 w. A mystery-drama in 3 scenes. An ideal play for young men. Full of gripping situations. Time, 1 hour. Royalty, \$10.00. French.
- Moonshine**, by Arthur Hopkins. 2 m. A drama laid in the moonshine district of the mountains. Time, 40 min. Royalty, \$5.00. French.
- Moth Balls**, by S. Kemper. 3 w. A sentimental comedy. Mary Craig, a popular author of plays, debates throwing off the yoke of matrimony. But when she discovers that Gladys Deane, her "star" is in love with "him," she very promptly changes her mind. Time, 20 min. Baker.
- Motherly Love**, by August Strindberg. In "A Treasury of Plays for Women." 4 w. A vivid scene of incompatibility between mother and daughter. Time, 30 min. Longmans, Green.
- Mrs. Oakley's Telephone**, by Eulora M. Jennings. 4w. A romantic comedy. After a broken engagement Fred and Constance are brought together by both accidentally getting on the same telephone wire. Splendid character parts for Irish and German servant girls. Time, 30 min. French.
- Mrs. Pat and the Law**, by Mary Aldis. 3 m., 2 w. Comedy. The visiting nurse prevails upon Mrs. Pat, who suffers many beatings at the hands of her drunken husband to get the law to discipline Pat. When policeman Bing does attempt

- to intervene, Mrs. Pat turns on both policeman and nurse in defense of Pat. Time, 45 min. Royalty, \$5.00. Baker.
- Mrs. Sullivan's Social Tea**, by Laura Frances Kelley. 1 m., 12 w. A comedy depicting laughable social attempts of the newly rich. Time, 30 min. Denison.
- My Lady Dreams**, by Eugene Pillot. In "A Treasury of Plays for Women." 4 w., 2 children. A lady who is unwilling to marry and give up her career has her mind changed in a series of dreams. Time, 30 min. Royalty on application. Longmans, Green.
- My Lord in Livery**, by S.T. Smith. 4 m., 3 w. A farce in which a lord is disguised as a footman and a footman is taken for a lord. Time, 45 min. Youmans.
- My Turn Next**, by T. J. Williams. 4 m., 3 w. Comedy. Twitter marries a widow whose late husband had assumed various names. Twitter thinks she had several mates of whom she disposed. He fears he will be the next. Time, 45 min. Fitzgerald.
- The Neighbors**, by Zona Gale. 2 m., 6 w. A delightful comedy of village life. The neighbors gather together to assist poor Miss Carry in taking care of her little orphan nephew. Royalty on application. Time, 1 hour. French.
- Nevertheless**, by Stuart Walker. 1 m., 1 boy, 1 girl. An interlude to be played before a curtain. A boy, a girl and a burglar discover what's nevertheless. Time, about 30 min. Royalty, \$10.00. Longmans, Green.
- The New Minister Arrives**, by Betty Thomas. 6 m., 2 w. A comedy centered about the new minister's visit to a family in his parish. Time, 50 min. Eldridge.
- The Night After**, by Arthur Blanchard. 11 m., 1 w. A comedy of college life which introduces singing if desired. Time, 40 min. Baker.
- No Girls Admitted**, by Edith M. Wormwood. 4 m., 4 w. Stage setting simple. A young folks' play that is very interesting. Time, 30 min. Youmans.
- The Northeast Corner**, by Brandon Tynan. 5 m., 1 w. Modern Irish and military costumes. A drama of patriotism and devotion, based on an episode in the Irish revolution. Time, 35 min. Royalty, \$5.00. French.
- The Obstinate Family**. 3 m., 3 w. A farce translated from the German. 1 interior. Very popular play. Has been given under titles "A Woman's Won't" and "Thank Goodness, the Table is Spread." Time, 40 min. Baker.
- The Old Lady Shows Her Medals**, by J. M. Barrie, from "Representative Plays." 2 m., 4 w. A one-act play in 3 scenes. Only the best actors who can handle Scotch should attempt this gem. Royalty, \$35. Scribner's.
- Old Walnut**, by Allena Harris. 2 m., 2 w. Comedy in which grandma and grandpa steal up to the attic to enjoy the discarded furniture of their youth. Time, 30 min. Costumes of 1866. Royalty, \$10.00. Longmans, Green.
- One Hundred Dollars**, by Ida Lublenski Ehrlich. 4 m., 1 w. A fascinating comedy based on the theme that a wife can earn more by her household duties than her husband gives her. Time, 45 min. Royalty, \$5.00. French.
- On the Racecourse**, by Lady Gregory. In "One-Act Plays for Stage and Study." 2nd series. 2m., 1 w. A quaint Irish folk-comedy in which a youngman purposely loses his money in gambling to the husband of the girl he once loved. Time, 30 min. Royalty, \$5.00. French.
- On the Shelf**, by Christopher Morley. In "One-Act Plays." 4 m., 4 w. Comedy, scene of which is on a shelf at a public library. The backs of eight volumes are visible and out of these come the characters to enact the story. Time, 30 min. Royalty, \$10.00. Doubleday, Page.
- On Vengeance Height**, by Allan Davis, in "Twelve Plays." 2 m., 2 w. A cabin interior. Costumes, mountaineer. A splendid character play, laid in the moun-

- tains of Tennessee, a wild atmosphere pervading the action. Can be most effectively done by a good amateur cast. Time, 30 min. Holt or French.
- 'Op-O'-Me Thumb**, by Frederick Fenn and R. Pryce. 1 m., 5 w. A romantic comedy. The play centers around a laundress who dreams of a grand lover. He appears a rough laborer. Requires skillful acting. Time, 40 min. Royalty, \$10.00. French.
- Our Aunt from California**, by Madalene Demarest Barnum. 6 w. An exceedingly funny farce. Three sisters are expecting visits from a rich aunt in California and also from a dress-maker. Many funny complications ensue. A popular girls' play. Time, 45 min. French.
- Our First Performance**, by W. C. Parker. 6 m. An interior. A farce for men. Time, 30 min. Dramatic.
- The Opera Matinee**, by Alice Gerstenberg. 14 w. A brilliant social satire. Shows 12 women in opera boxes with two women reporters sizing them up. Especially suited to women's clubs. Time, 40 min. Royalty, \$10.00. Longmans, Green.
- Outwitted**. 3w. A society sketch. Two girls attempt to outwit each other in gaining the attentions of a handsome young army officer. Time, 20 min. Fitzgerald.
- Our Kind**, by Louise Saunders. In "Magic Lanterns." 2 m., 1 w. A comedy concerning an American actor who is resting at Palm Beach after an "arduous season." Time, about 40 min. Royalty on application. Scribner's.
- Over the Hills**, by John Palmer. In "Twelve Plays." 2 m., 2 w. A fantasy centering about a storm outside. Royalty on application. Holt.
- Overtones**, by Alice Gerstenberg. In "Ten One-Act Plays". A sophisticated satire on society manners in which two women, each with a dual self are the characters. Royalty, \$10.00. Longmans, Green.
- A Pair of Burglars**, by B. P. Glenn. 2 m., 2 w. A farce with plenty of motion. Easy and effective. Time, 30 min. Baker.
- Pantaloon**, by J. M. Barrie. In "Half Hours". 3 m., 1 w. A fantasy of Columbine and Pantaloon. Time, about 30 min. French or Scribner.
- Pa's New Housekeeper**, by C. S. Bird. 3 m., 3 w. A roaring farce of the "Charley's Aunt" order suited for high school performance. Jack Brown is tempted to make up in the character of the new housekeeper who is expected but does not arrive. He takes in everybody and mixes up things generally. Time, 1 hour. Baker.
- The Passing of Chow-Chow**, by Elmer Rice. In "One-Act Plays for Stage and Study," 2nd series. 2 m., 1 w. A satire. The husband and wife apply for divorce because of a quarrel over the wife's dog. Quarrel and reconciliation take place in a lawyer's office. Time, 40 min. Royalty, \$10.00. French.
- A Patroness**, by Alice Gerstenberg. In "Treasury of Plays for Women." 1 w. A monologue of a society woman of much natural charm and some ability. Time, 30 min. Royalty on application. Longmans, Green.
- Peace Manoeuvres**, by Richard Harding Davis. 3 m., 1 w. Military uniforms. While the Red and Blue armies are engaged in a mimic war, two New York gunmen steal uniforms and disguise as soldiers and hold up a girl in an attempt to rob her of her necklace. Her soldier sweetheart foils the attempt and places them under arrest. Time, 40 min. Royalty, \$5.00. French.
- Peggy Green**, by Charles Selby. 3 m., 10 w. A farce. Scene, a country road. The characters of the play are all mixed up, but explanations are made and all ends satisfactorily. Songs may be introduced. Time, 1 hour. Dramatic.
- The Persecuted Dutchman**, by S. Barry, from "Successful Plays." 7 m., 2 w. A popular farce. Scene, interior. Time, 30 min. Flanagan.

- The Persian Poppy**, by Gilbert Emery. 1 w. Comedy of what an Irish dressmaker's assistant thought on Christmas Eve. Humorous, dramatic and exceptional monologue. Time, 25 min. Royalty, \$5.00. Longmans, Green.
- Pharaoh's Knob**, by Edith J. Craine. 1 m., 12 w. A comedy. Lieut. Kingston, in love with Elizabeth Jones, is repulsed by her mother, who does not approve of penniless soldiers. The Lieutenant finds an iridescent knob and as a joke makes a false claim as to its value. The news reaches Mrs. Jones and her antipathy to the officer disappears. The Lieutenant and Elizabeth are married before the truth becomes known. Time, 1 hour. Fitzgerald.
- Phipps**, by Stanley Houghton. In "One Act Plays for Stage and Study," 1st series. 2 m., 1 w. A well rounded, amusing and biting satire of contemporary life. Time 30 min. Royalty on application. French.
- A Pipe of Peace**, by Margaret Cameron, from "Twelve Plays," edited by Knickerbocker. 1 m., 2 w. Comedy. Mrs. Terrill, an antique collector, trades off her husband's favorite Meerschaum pipe for an old mahogany chair. Time, 30 min. Holt.
- Pity**, by Elia W. Peattie. In "The Wander Weed and Seven Other Little Theater Plays". 1 m., 2 w. A very dramatic portrayal of a wealthy woman's awakening to a feeling of pity for the working class of people. Time, about 40 min. Royalty on application. Sergel.
- Playing With Fire**, by Percival Wilde, from "Twelve Plays." 1 boy, 1 girl, 1 w. 1 interior. A comedy about Madge, age 16, and the means that she adopted to make sure that he loved her. The cook is the third character in the play. Royalty on application. Holt.
- Poor Aubrey**, by George Kelly. In "The Flattering Word, and Other One-Act Plays." 1 m., 3 w. A domestic comedy from which was developed "The Show-Off" Time, 30 min. Royalty, \$10.00. French.
- Poor Maddalena**, by Louise Saunders. From "Magic Lanterns," and "Twelve Plays." 2m., 1w. A fantastic play. 2 interiors. Costumes, French. A charming little love story in the land of fantasy. Recommended for dramatic clubs and high schools. Time, 30 min. Holt or Scribner's.
- The Pot Boiler**, by Alice Gerstenberg, from "Twelve Plays," edited by Knickerbocker. Costumes, characteristic. A comedy concerning the rehearsal of Sud's play, "The Pot Boiler." Henry Holt.
- The Prairie Doll**, by Edward Childs Carpenter. In "One-Act Plays for Stage and Study," 2nd series. 2 m., 1 w. Cowboy and modern costumes. A comedy of the Southwest in which a cowgirl is finally persuaded to sell her property when given the sort of clothes city women wear. Time, 35 min. Royalty, \$10.00. French.
- A Previous Engagement**, by W. D. Howells. 2 m., 2 w. A delightful farce-comedy in a sentimental vein. "A Previous Engagement" is typical of Howells' best style. French.
- The Prince of Court Painters**, by Constance D'Arcy Mackay, from "The Beau of Bath and Other One-Act Plays." 1 m., 2 w. 1 interior. Costumes, 1799. Romney, fallen from his high estate, finds a great forgiveness. Henry Holt.
- A Proposal Under Difficulties**, by John Kendrick Bangs. 2 m., 2 w. 1 interior. A light-hearted and amusing farce. Time, 35 min. French.
- A Question of Principle**, by Martin Flavin. In "One-Act Plays for Stage and Study," 2nd series. 6 m., 1 w. A keen satire on human nature in the form of a parable. For an advanced cast. Time, 30 min. Royalty, \$10.00. French.
- The Rag-Carpet Bee**, by Elizabeth Gale. 9 w. Comedy. A wealthy woman, who is supposed to set the pace of fashion, in haste puts her hat on backwards and

goes to church. It is mistaken for a new style and every one who attends the Rag-Carpet Bee follows her example. Time, 40 min. French.

**A Race for a Dinner**, by J. T. G. Rodwell. 10 m. 1 exterior. This laughable farce describes the many fruitless attempts of a hungry man to obtain a dinner. Time, 40 min. Dramatic.

**The Rector**, by Rachel Crothers. 1 m., 6 w. A story of the trials of the rector of a small country church. Time 35 min. French.

**Red Carnations**, by Glenn Hughes. In "One-Act Plays for Stage and Study," 2nd series. 2 m., 1 w. A satire of three people who engage in a very amusing trialogue near a park bench. Time, 25 min. Royalty, \$5.00. French.

**The Red Owl**, by William Gillette. In "One-Act Plays for Stage and Study," 1st series. 4 m., 1 w. Tabloid melodrama. Time, 45 min. Royalty, \$10.00. French.

**Red, White and Blue**, by James N. Cain. 3 m., The scene is laid in the Conference Room of the Towanda Chamber of Commerce, where the Committee in Charge of the dedication of a memorial playground is holding a meeting. American Mercury, Oct. 1927.

**A Regular Fix**, by J. M. Morton. 6 m., 4 w. A farce in which a man by mistake gets into the wrong house. His ingenious efforts to baffle inquiry keeps up a torrent of continuous fun. Time, 40 min. Dramatic.

**Rehearsal**, by Christopher Morley. In "A Treasury of Plays for Women" and in "One-Act Plays." A farce for six girls. The rehearsal of an Irish tragedy by a college dramatic club. Time, 30 min. Royalty, \$10.00. Longmans, Green, or Doubleday, Page.

**The Rescue**, by Rita Creighton Smith, from "Harvard Plays." 3 w. 1 interior. Originally produced by the Harvard Dramatic Club. Royalty on application. Brentano's.

**The Rider of Dreams**, by Ridgely Torrence, from "Short Plays by Representative Authors." 3m., 1 w. 1 interior. A comedy resembling the Irish drama in its mysticism. Royalty on application. Macmillan.

**Riders to the Sea**, by J. M. Synge. 1 m., 3 w. Tragedy of the Aran Islands. Requires excellent acting. Time, 40 min. French.

**Rising of the Moon**, by Lady Gregory. 4 m. Irish comedy. A criminal disguises as a ballad singer and convinces an officer of the law not to arrest him. Time, 18 min. Royalty, \$5.00. French.

**The Robbery**, by Clare Kummer. 3 m., 2 w. Delightful dialogue concerning a very amusing mix-up at 12 o'clock at night. Time, 25 min. Royalty, \$10.00. French.

**Rocking Chairs**, by Alfred Kreymborg. In "A Treasury of Plays for Women." Nonsensical satire on gossip. Time, 20 min. Royalty, \$10.00. Longmans, Green.

**Rosalie**, by Max Maurey. 1 m., 2 w. Comedy. Rosalie, the stubborn maid, leads her none too amiable master and mistress into uncomfortable complications. by refusing to open the front door to a supposed guest of wealth and influence. Time, 15 min. French.

**Rosalind**, by J. M. Barrie, in "Half Hours." 1 m., 2 w. A drama in which an actress disguises so as to overcome middle age. Royalty on application. French.

**The Rummage Sale**, by Jessie A. Kelley. 4 m., 10 w. Entertainment. An aid society to raise money, has a sale of their discarded clothes. The scheme proves to be more humorous than profitable. Especially suited to church societies. Time, 50 min. Denison.



- The Same Old Thing**, by Roi Cooper Megrue. In "One-Act Plays for Stage and Study," 2nd series. 3 m., 2 w. An actable comedy of the theater, which turns about a rehearsal of a tensely dramatic scene. Time, 45 min. Royalty, \$10.00. French.
- Sauce for the Goslings**, by Elgine J. Warren. 3 m., 4 w. A father, mother and grandmother, in a desperate effort to correct the speech of their young son and daughter decide to give them their own medicine by adopting slang on the occasion of an important visit from a college chum of Bob's. Time, 25 min. French.
- Saved**, by J. W. Rogers, Jr. In "One-Act Plays for Stage and Study," 2nd series. 7 w. A comedy of a young school teacher who breaks away from her domineering aunt, when she tries to prevent her marrying the man she loves. Time, 45 min. Royalty, \$5.00. French.
- See-Saw**, by Louise Saunders. In "Magic Lanterns." 2 m., 2 w. A drama on the ups and downs of ones emotions. Time, 30 min. Royalty on application. Scribner's.
- The Shadowed Star**, by Mary Macmillan, from "Short Plays by Representative Authors." 1 m., 6 w. A most pleasing dialogue of very apt technique and construction. Time, 45 min. Royalty on application. Macmillan.
- Sham**, by Frank Tompkins. 3 m., 1 w. Clever satiric thrusts at society in general and climbers and pretension in particular. Time, 30 min. Royalty \$10.00. D. Appleton Co.
- The Siege**, by Colin C. Clements. In "A Treasury of Plays for Women." 3 w. A drama of the Near East. Time, 25 min. Royalty on application. Longmans, Green.
- A Silent Woman**, by T. H. Lacy. 2 m., 1 w. Scene, drawing room. A betrothed returns to find his love dumb. At first he is delighted as he had wished he could marry a silent woman, but she leads him such a pace that he is glad to find it is only a hoax. Time, 20 min. Dramatic.
- The Silver Lining**, by Constance D'Arcy Mackay. In "The Beau of Bath and Other One-Act Plays." 2 m., 1 w. Costumes, Colonial, 1778. Fanny Burney writes under difficulties. Henry Holt.
- Six Who Pass While the Lentils Boil**, by Stuart Walker, in "Short Plays by Representative Authors." 6 m., 2 w. Costumes, any period. A fanciful bit of action carried out by six persons who pass a pot of boiling lentils on their way to the execution of a Queen condemned to die before the clock strikes twelve. Macmillan.
- The Slave with Two Faces**, by Mary Carolyn Davies. 3 m., 4 w. Fantastic costumes. A beautiful fantasy for an advanced cast. Time, 30 min. Royalty, \$10.00. French.
- Smarty's Party**, by George Kelly. In "The Flattering Word and Other One-Act Plays." 1 m., 3 w. A play which depicts the inevitable force of heredity. Time, 25 min. Royalty, \$10.00. French.
- The Snare and the Fowler**, by Beulah Marie Dix. In "Allison's Lad and Other Martial Interludes." 3 m. A drama depicting the early days of the French Republic. Time, about 40 min. Royalty on application. Holt.
- Speaking to Father**, by George Ade. 3 m., 2 w. The comedy has to do with a young man just out of college, the girl he wants to marry, and her father, the Pickle King. Time, 30 min. Royalty, \$5.00. French.
- Special Delivery**, by D. M. Henderson. 3 m., 2 w. A brisk little farce, easy and amusing. Time, 20 min. Baker.
- The Speed Limit**, by E. M. Gould. 5 m. Sketch in 2 scenes. Scenery unnecessary. A good-natured skit on automobiling, very funny and very easy to produce. Time, 20 min. Baker.

- Spreading the News**, by Augusta Gregory. 7 m., 3 w. 1 exterior. Costumes, Irish. A comedy involving a quarrel on the outskirts of a fair, from which the news was spread that a murder had been committed. Time, 30 min. Royalty, \$5.00. French.
- Spring Cleaning**, by Elia W. Peattie, from "The Wander Weed and Seven Other Little Theater Plays." 1 m., 1 w. A dramatic piece concerning the romance of Ada Cutting. Time, 30 min. Sergel.
- Squaring It with the Boss**, by J. C. McMullen. 3 m., 3 w. A farce with all star parts, concerning troubles of a young married couple. Time, about 45 min. Baker.
- A Stage-Struck Yankee**, by O. E. Durivage, from "Successful Plays." 4 m., 2 w. 2 interiors. Good for grammar schools, high schools and amateur theatricals. Time, 45 min. Flanagan.
- Station Y. Y. Y.**, by Booth Tarkington. In *Ladies Home Journal*, May, 1926. 3 m., 3 w. A comedy centering about radio in the home. Time, 40 min. Royalty on application. Curtis Publishing Co., Philadelphia, Pa.
- The Stepmother**, by Arnold Bennett, from "Twelve Plays," edited by Knickerbocker. 2 m., 2 w. The stepmother is a popular novelist and widow of 30 years. Royalty on application. Henry Holt.
- The Stronger Woman**, by August Strindberg. In "A Treasury of Plays for Women." 2 w. A drama of stage life. One of the characters does not speak at all. Time, 20 min. Longmans, Green.
- Such a Charming Young Man**, by Zoe Akins. In "One-Act Plays for Stage and Study," 1st series. 6 m., 3 w. A sophisticated comedy for advanced casts. Time, 45 min. Royalty, \$10.00. French.
- Sue 'Em**, by Nancy Bancroft Brosius. 2 m., 2 w. This dramatic and humorous incident from life was the first radio play printed in America. It was awarded first prize in the WGBS Radio Drama Contest. Royalty, \$10.00. French.
- A Suffragette Baby**, by Alice C. Thompson. 6 w., and a baby. Comedy. A group of suffragettes adopt an orphan baby. Each one tries to claim her. They finally agree that "she'll belong to all of us and we'll bring her up a suffragette." Time, 35 min. Penn.
- The Sugar House**, by Alice Brown, from "One-Act Plays." 4 m., 3 w. A dramatic story of a heroic woman who fought for her husband and won. Royalty on application. Macmillan.
- Sunrise**, by Elia W. Peattie, from "The Wander Weed." 3 m., 2 w. 1 exterior: mountain top. This deals with a feud in the mountains and how it was buried. Sergel.
- Sunset**, by J. K. Jerome. 3 m., 2 w. 1 interior. A comedy full of sympathy and interest and admirably suited to amateur performances. Time, 50 min. Baker.
- Suppressed Desires**, by Susan Glaspell and George Cram Cook. 1 m., 2 w. A clever farcical satire in two scenes by two of the founders of the Provincetown Players. Popular with amateur groups. Time, 50 min. Royalty, \$15.00. Baker.
- The Swan Song**, by Anton Tchekhoff, from "Short Plays by Representative Authors." 2 m. Costumes, Russian. One of the author's innumerable glimpses into the lives of Russian characters. Royalty on application. Macmillan.
- The Sweetmeat Game**, by Ruth Comfort Mitchell. 3 m., 1 w. Costumes, Chinese and modern evening dress. This drama tells an appealing story of a rich merchant, his wife, and blind son. Time, 40 min. Royalty, \$10.00. French.
- Taking Father's Place**, by W. C. Parker. 5 m., 3 w. Comedy in which a college son attempts to take the place of his father in his father's brokerage office. Good character parts. Time, 30 min. Denison.

- The Templeton Teapot**, by G. C. Strong. 4 m., 4 w. A romantic comedy. 1 interior. The Templeton Teapot, a priceless antique, gets tangled up with a modern love affair, getting the hero arrested as a burglar and everyone else sadly mixed up. Recommended for schools. Time, 30 min. Baker.
- Thank You, Doctor**, by Gilbert Emery. 3 m., 2 w. This melodramatic farce concerns a lady crook who causes complications over a diamond necklace. Royalty, \$10.00 Longmans, Green.
- That Rascal Pat**, by J. H. Grover. 3 m., 2 w. A ludicrous farce with an Irishman, whose varying drolleries and impudence in trying to serve two masters at once amuse the audience greatly. Time, 30 min. Fitzgerald.
- Thirty Minutes for Refreshments**, by G. M. Baker. 4 m., 3 w. A farce of great popularity. Time, 35 min. Eldridge.
- This Is So Sudden**, by M. Janney. 5 w. Jack, who does not appear, and who has been living on platonic terms with three bachelor girls for a long time, is suddenly seized with a bad attack of "matrimonium tremens." Time, 20 min. Baker.
- Those Husbands of Ours**, by Jessie A. Kelley. 7 w. A farce. A humorous picture of the condition of homes when cared for by husbands. Time, 1 hour. French.
- Three of a Kind**, by G. R. Bridgham. 1 m., 6 w. This comedy sketch concerns the idea of Bob and Eloise to disguise themselves like Miss Carrington, the expected governess. Time, 25 min. Baker.
- Three Pills In a Bottle**, by Rachel Lyman Field. In "Harvard Plays." 4 m., 3 w., 1 child (boy or girl). Costumes, fantastic. This fantasy combines pathos, gaiety and wistfulness with a big theme. It has achieved the record of some five hundred productions. Time, 30 min. Royalty, \$10.00. Brentano's.
- Thursday Evening**, by Christopher Morley. 1 m., 3 w. A domestic comedy of a young couple who, on Thursdays, are visited by their respective mothers-in-law. One of the most popular one-act plays. Time, 30 min. Royalty, \$10.00. Longmans, Green.
- Tired**, by Juliet W. Tompkins. 1 m., 3 w. An amusing comedy. A widower proposes to the right girl through the influence of his infant. Time, 30 min. Royalty, \$5.00. Longmans, Green.
- Tommy**, by Ethel Hale Freeman. 2 m., 6 w. Comedy. The chief interest centers in Tommy, a young girl and state ward, who prefers her country companion to a rich, city-bred gentleman. Time, 40 min. French.
- Trifles**, by Susan Glaspell. 3 m., 2 w. A tragedy. A man appears to have been murdered in a lonely farmhouse and his wife is under arrest on suspicion. Two friends, finding a slain canary and a broken bird cage, divine the whole story of a woman driven to desperation by cruelty and neglect. Time, 40 min. Royalty, \$10.00. Baker.
- The Trysting Place**, by Booth Tarkington. 4 m., 3 w. A farce in which the author makes adroit use of the entertaining possibilities of a high class summer hotel. Good character parts. Time, 50 min. Royalty on application. Baker.
- The Turtle Dove**, by Margaret Scott Oliver. In "Plays for Classroom Interpretation". 5 m., 1 w. Chorus. Chinese costumes. The play deals with the always-new love of youth for maid, the abrupt tempering of a father's wrath to forgiveness, and the immutability of fate. Royalty on application. Holt.
- The Twelve-Pound Look**, by J. M. Barrie. In "Half Hours," and "Representative Plays." 2 m., 2 w. A drama. A woman comes to the hero in his great hour when he is to receive the honor of knighthood, and tells him she does not admire him. One of the best one-act plays ever written. Time, 45 min. Royalty on application. French or Scribner's.

- Twenty Minutes Under an Umbrella**, by A. W. Dubourg. 1 m., 1 w. An interesting little sketch of what happened to Cousin Frank and Cousin Kate when a timely shower compelled them to spend twenty minutes under an umbrella. Denison.
- Two Crooks and a Lady**, by Eugene Pillot, from "Harvard Plays." 3 m., 3 w. This play concerning the robbery of a diamond necklace was suggested by a short story, "Fibre," by Richard Washburn Child. Brentano's.
- Uncle Jimmy**, by Zona Gale. 3 m., 5 w. Uncle Jimmy has always wanted to travel but has visited only Chicago. His opportunity comes when he is asked to spend six months on a claim in Idaho. The women join in fitting Jimmy for the journey, but as the train is about to leave his courage fails. Recommended for women's clubs especially. Time, 45 minutes. Royalty on application. Baker.
- Under the Law**, by Jessie Wilder. 3 m., 1 w. Drama in which the misappropriation of bank funds furnishes the theme. Time, 45 min. Eldridge.
- The Unseen**, by Alice Gerstenberg. In "Ten One-Act Plays." 1 m. 3 w., A domestic drama with a good deal of comedy showing how the defeat of a desire proved to be a deliverance from great danger. Royalty on application. Brentano's.
- The Valiant**, by Holworthy Hall and Robert Middlemass. 5 m., 1 w. A tragedy of a man who faces the death penalty under an assumed name and who steadfastly refuses to disclose his identity. A powerful emotional drama. Time, about 50 min. Royalty, \$10.00. Longmans, Green.
- A Very Pleasant Evening**, by W. E. Suter. 3 m. An amusing farce for male characters. Time, 30 minutes. Denison.
- Waiting at the Church**, by Franz and Lillian Rickaby. 5 m., 3 w. A light and amusing comedy farce. Time, 45 minutes. Baker.
- The Waiting Room**, by Annie Steger Winston. 1 w. The scene is the anteroom of a doctor's office. Filled with quiet humor. Time, 10 min. Royalty, \$2.50. Longmans, Green.
- Walk This Way, Please**, by Sophie Huth Perkins. 5 m., 10 w. (2 are children.) A department store comedy. Time, 50 min. Denison.
- Walt**, by Christopher Morley. In "One-Act Plays." 6 m., 1 w. A picture of Walt Whitman. The characters are real people. Time, 30 min. Royalty, \$10.00. Doubleday, Page.
- The Wander Weed**, by Elia W. Peattie. In "The Wander Weed." 1 m., 3 w. A drama of the Blue Ridge mountaineers. Admits of good acting. Time 40 min. Royalty on application. Sergel.
- Wanted: A Confidential Clerk**, by W. F. Chapman. 6 m. No scenery required. This farce includes an eccentric merchant, a comic Irishman, a dude, a "talkative sport," a shabby genteel bumner, and the clerk who sees the situation. Time, 30 min. Eldridge.
- Wanted: A Cook**, by Edith Painton. 1 m., 6 w. A comedy concerning Mrs. Hunt, who has advertised for a cook, and is visited by six different applicants: Irish, German, Norwegian, Negro, Chinese, and American. Time, 20 min. Denison.
- Wanted—A Pitcher**, by M. N. Beebe. 11 m. This farcical play includes Hebrew, Irish, Italian and "hayseed" comedy character parts. Time, 30 min. Baker.
- A Watch, A Wallet and a Jack of Spades**, by Lindsey Barbee. 3 m., 6 w. Comedy in which three famous detectives are engaged to unravel the mystery of the disappearance of a roomer. Time, 40 min. Denison.

- The Weakest Link**, by Beulah Marie Dix. In "Allison's Lad and Other Martial Interludes." 4 m. A drama enacting a scene of the Hundred Year's War. Time, 30 min. Holt.
- The Weak Spot**, by George Kelly. In "The Flattering Word and Other One-Act Plays." 1 m., 2 w. A satire illustrating how superstition often lies latent beneath the scoffing of the practical-minded. Time, 25 min. Royalty, \$10.00. French.
- Wealth and Wisdom**, by Oliphant Down. In "One-Act Plays for Stage and Study," 1st series. 1 m., 1 w. A romance of a wealthy young Englishman and an Irish dairymaid. Time, 30 min. Royalty, \$5.00. French.
- The Web**, by Alice Brown, from "One-Act Plays." 3 m., 2 w. A dramatic play in which a minister returns to save souls in the place where he has sinned. Time, about 45 min. Macmillan.
- When Monty Came Home From the Marne**, by Seymour S. Tibbals. A monologue of the World War. Eldridge.
- When the Silver Bell Tree Blooms**, by Elia W. Peattie, from "The Wander Weed and Seven Other Little Theater Plays." 1 m., 2 w. Scene, a studio. All three parts require strong, compelling action. Royalty, \$5.00. Sergel.
- Where But in America**, by Oscar M. Wolff. In "Twelve Plays." 1 m., 2 w. Satirical comedy. A Swedish maid's young man builds and owns the house which her employers are to occupy as tenants. A good study in democracy. Time, 30 min. Royalty, \$5.00. Holt.
- The Widow of Wasdale Head**, by Sir Arthur Wing Pinero. In "One-Act Plays for Stage and Study," 1st series. 4 m., 1 w., and a ghost. A fantasy, the time of which is in the reign of George the Third. Royalty on application. French.
- The Will**, by Sir James Barrie. In "Half Hours." 5 m., 1 w. A drama concerning the making of a will, and the evil influence of too much money. Royalty on application Scribner's or French.
- Will O' the Wisp**, by Doris F. Halman. In "Plays for Classroom Interpretation." 4 w. A poetic fantasy. Takes place in the interior of a farmhouse at the land's end. Time, 20 min. Royalty, \$10.00. Holt.
- The Woman Juror**, by E. F. Parr. 2 m., 2 w. An incident about an ex-convict who is saved from another crime by a woman he once loved. Time, 30 min. Royalty, \$5.00. French.
- A Womanless Wedding**, by Mrs. James W. Hunt. Requires about 20 characters preferably men. Can be given by less. This is a laughable burlesque wedding in which the characters represent different countries. Splendid for church or lodge entertainment. Time, 45 min. Youmans
- A Woman of Character**, by Estelle Aubrey Brown. 9 w. The characters afford splendid opportunity from the little old lady to the silly bride. A good character study showing the frailties of human nature. Royalty, \$5.00. Longmans, Green.
- Woman's Crowning Glory**, by Herbert Swears. 2 m., 3 w. A domestic comedy in which the author has been able to develop a particularly interesting and amusing theme. Time, 1 hour. Royalty, \$5.00. French.
- Women Folks**, by J. W. Rogers, Jr. 2 m., 3 w. An interesting and human comedy of American life. Time, 30 min. Royalty, \$5.00. French.
- Wooring Under Difficulties**, by John T. Douglass. 4 m., 3 w. A confused situation with a butler and a suitor. Time, 30 min. Denison.
- The Yellow Triangle**, by George W. Sutton, Jr. 6 m., 1 w. A very effective play showing the revenge of an African servant on a cruel and good-for-nothing

white man. A Samuel French prize play. For advanced groups and little theaters. Royalty, \$10.00. French.

**Young America**, by Fred Ballard and Pearl Franklin. In "One-Act Plays for Stage and Study," 2nd series. 4 m., 1 w. A farce. A domestic scene in which the wife wins her point bringing home with her the delinquent boy and his beloved dog. Time, 40 min. Royalty, \$10.00. French.

### PLAYS OF TWO OR MORE ACTS

**Aaron Boggs, Freshman**, by Walter Ben Hare. 8 m., 8 w. College comedy in 3 acts. 1 exterior, 1 interior scene. Time, 2½ hours. Eldridge.

**Aaron Slick from Punkin Crick**, by Lieut. Beale Cormack. 3 m., 4 w. A clean rural comedy in 3 acts. Scenery, 2 simple interiors. Dramatic scenes, with funny action and lines interspersed. Time, 2 hours. Eldridge.

**Aboard a Slow Train in Mizzoury**, by Walter Ben Hare. 8 m., 14 w., and supernumeraries. A farcical entertainment in 3 acts. Scene, the interior of a passenger car. Costumes, modern and eccentric. All the parts good; strongly recommended for laughing purposes only. Time, 2½ hours. Baker.

**Adam and Eva**, by Guy Bolton and George Middleton. 6 m., 4 w. Comedy in 3 acts. 1 interior, 1 exterior scene. A bright and amusing play on the American business man who has a genius for making money but not a trace of talent for managing his own family. Time, 2½ hours. Royalty, \$25.00. French.

**The Admirable Crichton**, by J. M. Barrie, from "Representative Plays." 7m., 7 w. Satirical comedy in 4 acts. 2 interiors, 1 exterior, rather difficult. The butler of an English household becomes the master when all are wrecked on an island and his ingenuity saves them, even though it means the end of his reign. Royalty, \$50. Scribner's.

**The Adventures of Grandpa**, by Walter Ben Hare. 4 m., 5 w. A farce in 3 acts. 1 interior scene. A modern dancing academy is quarantined with its patrons inside. Complications center about Grandpa. Provides for a variety of characters and is easy to produce. Time, 2½ hours. Baker.

**The Alabaster Box**, by Anna J. Harnwell and Isabelle J. Meaker. 2m., 2 w., 1 boy. A religious play in 3 acts. 1 simple interior. A beautiful interpretation of the happenings in the house of Mary and Martha from the Crucifixion to the Resurrection. Royalty on application. Longmans, Green.

**Alicia Perks Up**, by Carl Webster Pierce. 4 m., 8 w. Comedy in 3 acts. 2 easy interiors. A sparkling satire on the ladies and some of their foibles. Baker.

**All About Adam**, by Alice C. Thompson. 1 m., 5 w. Comedy in 2 acts. Scenery, 2 interiors. An easy and effective play especially suited to schools. Time, 1 hour. Baker.

**All a Mistake**, by W. C. Parker. 4 m., 4 w. A farce-comedy in 3 acts. Scenes, lawn at "Oak Farm," and drawing-room. Easy to produce. Full of continuous action and humor. Time, about 2 hours. Denison.

**All on Account of Polly**, by Harry L. Newton. 6 m., 10 w. (2 are children.) 1 interior. The story of an extravagant and spoiled family. Into this clouded atmosphere of selfishness and deceit comes a ward who brings the standards of simplicity and happiness. Full of joy and optimism. Time, 2¼ hours. Denison.

**All Tangled Up**, by Charles Townsend. 5 m., 3 w. A farce in 3 acts. 1 interior. Full of action. The Major gives his partner's card to the young lady he befriends and thus tangles up the affairs of seven people. Suited to amateur production. Time, 2 hours. Baker.

- Always in Trouble; or, A Hoodooed Coon**, by Walter Ben Hare. 5 m., 4 w. A wholesome farce in 3 acts. Interior of railway station, easily set, but may be given without scenery if desired. The star part is a melancholy negro; other characters white. Full of movement and funny situations. Time, 2 hours. Eldridge.
- The Amazons**, by A. W. Pinero. 7 m., 5 w. A farce in 3 acts. 1 exterior, 1 interior, not difficult. Lady Castlejordan, greatly desiring a boy, has three girls. As the best way out of the difficulty she gives her girls boys' names, and dresses, educates and otherwise brings them up as boys. Very popular with women's clubs and girls' schools and colleges. Time, 2 hours. Royalty, \$10.00. Baker.
- The Amethyst**, by Victor Mapes. 8 m., 8 w. Comedy in 4 acts. 2 interiors. A clever and absorbing study of contemporary American life, especially suited to advanced amateur groups. Time, 2¼ hours. Royalty on application. French.
- And Home Came Ted**, by Walter Ben Hare. 6 m., 6 w. A comedy of mystery in 3 acts. 1 interior. All parts of almost equal importance. Rollicking fun pervades the action. Time, 2¼ hours. Royalty, \$10.00. Denison.
- Angling for Eddie**, by Frederic N. Weaver. 4 m., 5 w. Comedy in 3 acts. 1 interior. The amusing, plausible plot concerns a youth with an inferiority complex struggling toward success. Interest never lags. Time, 2 hours. Royalty, \$10.00. Baker.
- Anne of Ann Arbor**, by Ross Farquhar. 4 m., 4 w. Comedy-drama in 4 acts. Scenes, simple. The plot is unique and characters good. Especially adapted to high school production. Time, 1¾ hours. Royalty, \$5.00. Eldridge.
- Applesauce**, by Barry Connors. 4 m., 3 w. Comedy in 3 acts. 2 interiors. A bright, amusing and cheerful comedy of small town folk, especially recommended for high schools. Time, 2 hours. Royalty on application. French.
- Aren't We All?**, by Frederick Lonsdale. 6 m., 2 w. Modern social comedy of manners in 3 acts. 2 interiors. Brilliant play concerned with the wholly natural foibles of a very human set of people. Very popular with advanced amateur groups and little theaters. Time, 2¼ hours. Royalty on application. French.
- Are You a Mason?**, by Leo Dietrichstein. 7 m., 7 w. A farce in 3 acts. 1 interior. One of the most hilariously amusing farces ever written, especially suited to schools and Masonic Lodges. Time, 2¼ hours. Royalty, \$25.00. French.
- An Arizona Cowboy**, by Sheldon Parmer. 7 m., 5 w. Comedy-drama in 4 acts. 1 exterior, 1 interior, easily arranged. A strong play of the cattle ranges of the great Southwest, abounding in thrilling but natural situations, and full of side-splitting comedy. Time, 2¾ hours. Denison.
- Arnold Goes Into Business**, by J. C. McMullen. 7 m., 6 w. Comedy in 3 acts. 1 easy interior. Arnold, who has a weak heart, surprises everyone by getting married. His wife makes a man of him. Effective climaxes and strong characters. Baker.
- The Arrival of Billy**, by Ada L. Huntington. 1 m., 5 w. A farce in 2 acts. 1 interior. A cousin writes that she is sending Billy to be cared for during her visit in California. Billy, upon arrival, proves to be a cat. The climax is very funny. Time, about 45 min. Youmans.
- The Arrival of Kitty**, by N. L. Swartout. 5 m., 4 w. A farce in 3 acts. 1 interior. Bobby Baxter, pursuing his love affair with Jane against the opposition of her uncle, William Winkler, has occasion to disguise himself in female costume and is taken for Kitty, an actress and a close friend of Winkler. Time, 2 hours. Royalty, \$10. Baker.

- The Art of Being Bored**, by Edouard Pailleron. 11 m., 9 w. Comedy in 3 acts. 2 interiors. Probably the best-known and most frequently acted comedy of manners in the realm of the 19th century French drama. It is replete with wit and comic situations. Time, 2 hours. French.
- As a Woman Thinketh**, by Edith F. A. U. Painton. 9 m., 7 w. A domestic comedy in 3 acts. 2 interiors. A play in which the philosophy of cheerfulness, some mysticism, and an abundant leaven of common sense are shown to work wonders. Time, 2½ hours. Denison.
- At the End of the Rainbow**, by Lindsey Barbee. 6 m., 14 w. A college comedy in 3 acts. 3 interiors. A charming college story built around the annual football game, with a comedy element and real dramatic touches. Time, 2¼ hours. Denison.
- At the Pottersville Post-Office**, by John M. Francis. 9 m., 8 w. A 3-act farce-comedy. 1 simple exterior, or merely a bare platform. Modern and rural costumes. The plot provides for the introduction of specialties. A farce full of humorous situations. Time, 2 hours. French.
- At the Sign of the Pewter Jug**, by Harriett N. Connell. 5 m., 6 w. Comedy in 3 acts. 1 interior. Three girls turn their home into an inn to earn \$5000. Complications and humorous situations result. Time, 1¾ hours. Bugbee.
- At the Sign of the Shooting Star**, by G. R. Bridgham. 10 m., 10 w. A comedy in 3 acts. 1 interior, 1 exterior. Prince Ulric believes Shirley Glenfield is an enemy of his kingdom. The Prince obtains employment as her chauffeur and involves her in grave trouble with the secret service of his country. Time, 2 hours. Baker.
- Aunt Jerushy on the War-path**, by Lieut. Beale Cormack. 4 m., 5 w., and a chorus (which may be omitted). A rural farce in 3 acts. No scenery required. Concerns a group of country folks on the farm and at a village carnival. Very humorous. Time, 2¼ hours. Fitzgerald.
- The Average Man**, by Oliver P. Parker. 6 m., 7 w. A comedy-drama in 5 acts. 3 interiors. A play with strong action and pleasing parts. Very easy to produce. Especially recommended for a community play. Time, 2¼ hours. Royalty, \$5.00. Copies of parts furnished on payment of royalty fee. National Drama.
- Backbone**, by Ross Farquhar. 9 m., 6 w. and as many others as desired. A comedy-drama in 3 acts. 3 easy interiors. Willie Scott finds that he has a backbone, and things begin to hum. Time, 2¼ hours. Royalty, \$5.00. Eldridge.
- Back to the Country Store**, by Ward Macauley. 4 m., 5 w. A rural comedy in 3 acts. 2 easy interiors. Time, 2 hours. Penn.
- Back to the Farm**, by Merline H. Shumway. 6 m., 4 w. Comedy-drama in 3 acts. 1 exterior, 2 interiors. An excellent play, especially recommended for rural communities. Merton Merrill studies agriculture at the University and goes "back to the farm" to help his father. Agricultural Extension Division, University of Minnesota.
- The Bad Man**, by Porter Emerson Browne. 8 m., 3 w., 2 supernumeraries. (May be played with 7 m., 3 w.) Comedy in 3 acts. 1 interior. Costumes, modern and Mexican. A colorful and romantic drama of the Mexican border. Time, 2 hours. Royalty on application. French.
- Barbara Makes a Splash**, by Eugene Hafer. 5 m., 4 w. A comedy-drama in 3 acts. 2 easy interiors. A play of unusual possibilities in the hands of good actors, and with a fine star part. The heroine has vowed vengeance on the man who has caused the death of her father and mother by robbing them of their



life's savings ten years ago. There are good comic parts to relieve the tension. Time, 2 hours. Royalty, \$10.00. Baker.

**Bashful Mr. Bobbs**, by Walter Ben Hare. 4 m., 7 w. A farce-comedy in 3 acts. 1 interior. The bashful Mr. Bobbs has to shoulder the blame for his cousin's escapades. Introduces excellent, well-contrasted characters. Time, 2½ hours. Fitzgerald.

**Be an Optimist**, by Adam Applebud. 6 m., 7 w. A nonsense comedy in 3 acts. 2 simple interiors. A highly amusing play full of many original situations. Time, 2½ hours. Royalty, \$10.00. Baker.

**Because I Love You**, by John A. Fraser. 8 m., 4 w. A drama in 4 acts. A strong drama of the modern romantic style. A love story filled with sentiment and pathos, yet with unusual comedian parts. Time, 2 hours. Royalty, \$5.00. Dramatic.

**A Bee in a Drone's Hive**, by Cecil Baker. 8 m., 5 w., 3 children. (Cast may be doubled for fewer characters.) A comedy in 2 acts. 1 interior, 1 exterior. A fine argument in favor of country life, written by a successful farmer. From "The Little Country Theater," by Alfred G. Arvold. Macmillan.

**Belinda**, by A. A. Milne. 3 m., 3 w. A delightful comedy in 3 acts. 1 interior, 1 exterior. One of the eternally fresh plays of love and romance and poetry that are of no age or place. Time, 2 hours. Royalty, \$50.00. French.

**Betty's Last Bet**, by Edith Ellis. 5 m., 6 w. Farce-comedy in 3 acts. 1 interior. Betty's wagering keeps her and her family in hot water. Her last bet incites an amazing train of complications. Easy to produce, yet splendid opportunity for clever acting. Time, 2½ hours. Royalty, \$20.00. Denison.

**The Bewildering Miss Felicia**, by G. F. Sturgis. 14 w. Comedy in 3 acts. 1 interior 1 exterior. Costumes, period of 1830; may be modern if desired. Miss Felicia, by her radiant personality, transforms the characters of the old maids of the village, making them drop all their petty shams and jealousies. French dialect, negro, and country girl comedy characters. Time, 2¼ hours. Baker.

**Billeted**, by F. Tennyson Jesse and H. Harwood. 4 m., 5 w. A comedy in 3 acts. 1 easy interior. A charming play, constructed with uncommon skill, and abounding in clever lines. Amateurs will find this comedy easy to produce and popular with all audiences. Time, 2 hours. Royalty, \$25.00. French.

**Bill, the Coachman; or, A Couple of Curious Courtships**, by John M. Francis. 4 m., 4 w. A farce-comedy in 3 acts. 2 interior scenes. A humorous mix-up of situations. All parts are good. Time, 2 hours. French.

**Billy**, by George Cameron. 10, (or 7) m., 5 w. A farce-comedy in 3 acts. 1 exterior scene: upper deck amidship S. S. Florida. The story has to do with the disappearance of a set of false teeth, which creates endless complications and causes the heartiest laughter. One of the funniest comedies of late years. Time, 2¾ hours. Royalty, \$25.00. French.

**Bobbie Takes a Look**, by Gladys Ruth Bridgham. 6 m., 8 w. A comedy in 2 acts and an epilogue. 1 easy interior. A love story centering about a returned soldier whose sweetheart from France appears after his engagement to an American girl is announced. Time, 1¾ hours. Baker.

**Border Land**, by Charles Townsend. 7 m., 4 w. Drama in 3 acts. Scenery, parlor, woods, and plain room. An excellent play depicting life on the western border. Every character good. Well suited for amateur performance. Time, 2 hours. Dramatic.

**Borrowed Money**, by O. P. Parker. 6 m. (one an office boy), 9 w. A comedy-drama in 4 acts, concerning a Kentucky race-horse and the New York Stock

Markets. 3 interiors. Time, 2 hours. Royalty, \$5.00. Copies of parts furnished on payment of royalty. National Drama.

**A Box of Monkeys**, by G. L. Furniss. 2 m., 3 w. A farce in 2 acts. An easy interior. Scenery, unimportant. Sierra, who has always lived on a ranch, has been sent to her aunt in New York to be "finished". But Sierra turns the tables and her wild pranks almost finish her aunt and all concerned. Time, 1½ hours. Baker.

**The Brat**, by Maud Fulton. 4 m., 7 w. Comedy in 3 acts. 1 interior. A charming study in which people rate themselves and others according to social position. Very popular; highly recommended to dramatic clubs, colleges, and large high schools. Time, 2¼ hours. Royalty, \$25.00. Longmans, Green.

**Brewster's Millions**, by Winchell Smith and Byron Ongley. 19 m. (6 may be doubled), 6 w. Comedy in 4 acts. 2 interiors, 1 exterior. Monty has to spend a million dollars in order to inherit his uncle's fortune. Very novel plot. Time 2¼ hours. Royalty, \$25.00. French.

**Bride and Groom**, by Walter Ben Hare. 5 m., 5 w. A farce in 3 acts. 1 simple interior. The young husband, having married his sweetheart through a trick, tries to regain her favor by rescuing her from a supposed burglar. Time, 2 hours. Fitzgerald.

**Brown-Eyed Betty**, by Gladys Ruth Bridgham. 6 m., 6 w. 3 easy interiors. A clever comedy-drama in 3 acts, dealing with distinct types of village life. Extras may be used in Act 3. Time, 2½ hours. Eldridge.

**The Brown Mouse**, by Mabel B. Stevenson. 10 m., 6 w. A rural play in 4 acts. 3 interiors. Costumes, modern and rural. The "Brown Mouse" is a plea for better rural schools. It is a dramatization of Herbert Quick's novel by that name. The play contains a serious message; at the same time it is filled with humor. Time, 2 hours. Royalty, \$10.00. French.

**Buddies**, by Geo. V. Hobart; lyrics and music by B. C. Hilliam. 9 m., 5 w. A comedy of quaint Brittany in 3 acts. 1 exterior, 1 interior. Costumes, character, American, French, and soldier. Can be played in one set of scenery by slight arrangement of lines at end of last act. A very splendid play for large high schools. Royalty on application. American Play Co.

**The Bug Hunter**, by Harry L. Dixon. From "Portfolio of Dixon Plays." 5 m., 3 w. A drama in 3 acts. 1 exterior, 1 interior. A rural play introducing the college bug hunter. Many amusing situations arise. Time, 2 hours. Royalty, \$5. Copies of parts furnished on payment of royalty fee. National Drama.

**A Bunch of Fun**, by Erastus Osgood. 5 m., 9 w. A farce in 3 acts. 1 simple interior. The plot of this farce crackles with fun as though charged with laughter and smiles. A college group forms the "Bunch", giving an evening of wholesome amusement. Time, 2 hours. Baker.

**A Bundle of Matches**, by Helen P. Kane. 1 m., 7 w; the man may be impersonated by a woman. A society comedy in 2 acts. 1 exterior, the wide piazza of a Newport hotel. The abrupt endeavors of the male character to pop the question to each of the summer boarders in turn are intensely amusing. Time, 1½ hours. Fitzgerald.

**A Cabin Courtship**, by Irene Jean Crandall. 5 m., 4 w. A comedy in 3 acts. 1 interior. The action takes place in a remote cabin in the mountains of Tennessee. Shows how life in the wilderness brings out real character. Time, 2 hours. Denison.

**Camille**, adapted from the French of Alexander Dumas, fils. 9 m., 5 w. Drama in 5 acts. Interior scenes; costumes, modern. "Camille" has been performed

- by leading actresses, and has made its author immortal. Time, 3 hours. Baker.
- The Camouflage of Shirley**, by Lindsey Barbee. 8 m., 10 w. Comedy-drama in 3 acts. 3 interiors. For the sake of wearing a service pin, a name from the "sailing for France" list is appropriated. The engagement is announced and then the owner of the name appears. A romantic war-time play. Time,  $2\frac{1}{4}$  hours. Denison.
- Cappy Ricks**, by Edward E. Rose. 6 m., 3 w. Comedy in 3 acts. 1 interior, 1 exterior. Plot centers about Alden P. Ricks, a weather-beaten old sea dog devoted to his daughter. Time,  $2\frac{1}{2}$  hours. Royalty, \$25. French.
- Captain Applejack**, by Walter Hackett. 6 m., 5 w. An Arabian Night's Adventure in 3 acts. 2 interiors. Costumes, modern and fantastic. A young man is so bored by his existence that he advertises his house for sale and determines to go off in search of adventure. He gets his wish but without leaving the house. An ideal play for every type of amateur; clean, amusing, thrilling. Time,  $2\frac{1}{2}$  hours. Royalty on application. French.
- Captain Racket**, by Charles Townsend. 4 (or 5) m., 3 w. Comedy in 3 acts. 1 easy interior. Good characters, full of action, many comic situations. Time, 2 hours. Royalty, \$5. Dramatic.
- A Case for Divorce**, by James O. Kaler. 11 m., 3 w. Comedy in 3 acts. 3 interiors. Strong characters, lively dialogue, telling situations. Time,  $2\frac{3}{4}$  hours. Dramatic.
- The Cassilis Engagement**, by St. John Hankin. 4 m., 8 w. Comedy in 4 acts. 1 exterior, 3 interiors. One of the best and most amusing of modern comedies of manners. Time  $2\frac{1}{2}$  hours. Royalty, \$25. French.
- The Cave Girl**, by George Middleton and Guy Bolton. 7 m., 3 w. A comedy in 3 acts. 1 interior, 1 exterior. A rousing comedy, full of good-natured satire on city people, and particularly on a certain professor who declared that any intelligent person can provide for himself in the wilds. Especially recommended to high schools. Time,  $2\frac{1}{2}$  hours. Royalty, \$25. French.
- The Charm School**, by Alice Duer Miller and Robert Milton. 6 m., 10 w. A fascinating comedy in 3 acts. Any number of school girls may be used in the ensembles. 2 interiors. A young automobile salesman inherits a girls' boarding-school and insists on running it himself according to his own ideas, chief of which is that the dominant feature of the education of the young girls of today should be charm. Time,  $2\frac{1}{2}$  hours. Royalty, \$25. French.
- A Cheerful Liar**, by John A. Fraser. 5 m., 3 w. Farcical comedy in 3 acts. 3 interior scenes, all easily arranged. A shrieking comedy, full of "go" and new situations. A plot full of entanglements. Any number of specialties may be introduced. Time, 2 hours. Royalty, \$5. Dramatic.
- Cheer-Up**, by Walter Ben Hare. 6 m., 9 w., and a group of children. A comedy of inspiration in 3 acts. 2 easy interiors, or 1 interior and 1 farm-yard. The trials of an orphan adopted by a wealthy lady. No sentimental love interest, but a humorous, whimsical story. Especially good for Sunday schools and high schools. Royalty, \$10. Baker.
- "Cheer Up, Chad"**, by Eugene Hafer. 5 m., 5 w. Comedy in 3 acts. 2 easy interiors. June Crawford defiantly states that she will have Chad Barnett, her employer, at her feet in two weeks. Laughs and action in abundance. Royalty, \$10. Eldridge.
- Children of the Moon**, by Martin Flavin. 5 m., 3 w. A drama in 3 acts. 1 interior. "Children of the Moon" is one of the outstanding serious tragic plays of the last few years. A highly effective study of a real problem. Suited only

- to advanced and mature amateurs and little theater groups. Time,  $2\frac{1}{4}$  hours. Royalty, \$25. French.
- The Cinderella-Man**, by Edward Childs Carpenter. 8m., 3 w. A comedy in 4 acts. 2 interiors. Tells the story of Cinderella, only the heroine is in this case a hero. By means of striking contrasts, of varied characterizations, and his eternally bright philosophy, the dramatist has contrived a charming comedy. Recommended for high schools. Time,  $2\frac{1}{4}$  hours. Royalty, \$25. French.
- Claim Allowed**, by Oliver P. Parker. 8 m., 7 w. A drama in 4 acts. 4 interiors. A charming war play. Especially good for dramatic clubs and little theaters. Time, 2 hours. Royalty, \$5. Copies of parts furnished on payment of royalty fee. National Drama.
- The Clancey Kids**, by T. H. Guild. 14 w., and supernumeraries. Comedy in 2 acts. 1 easy exterior. Very humorous. Strongly recommended for school performance. Time, 1 hour. Baker.
- Clarence**, by Booth Tarkington. 5 m., 5 w. A comedy in 4 acts. 2 interiors. Clarence, who drove mules in the army, finds an anomalous position in the home of a wealthy man with a family. He becomes guide, philosopher and friend to the members of the distracted family group. Time,  $2\frac{1}{2}$  hours. Royalty, \$25. French.
- Clarence Decides**, by Beulah King. 4 m., 6 w. A farce in 3 acts. 1 interior. The three gardeners, who are rich young men in disguise, foil the attempt of the ambitious aunt to wed her country nieces to a social catch. A clever comedy for high schools and amateurs. Time, 2 hours. Eldridge.
- The College Ball**, by Harry O. Osgood. 7 m., 5 w. Comedy in 4 acts. 3 interiors. Kitty, a professor's daughter, piqued by Tom's refusal to betray society secrets, lowers his marks to disqualify him from pitching for the college. Time 2 hours. Baker.
- A College Cinderella**, by Edward Kidder and Augusta Raymond Kidder. 4 m., 8 w. Comedy in three acts. 1 interior. Deera Holt, poor and proud, writes a little play in the hope of winning a prize. Time, 2 hours. Royalty, \$10. French.
- A College Town**, by Walter Ben Hare. 9 m., 8 w. A college farce-comedy in 3 acts. 2 interiors, 1 exterior. Characters, college town types. Plot based on college pranks and humor. Time,  $2\frac{1}{4}$  hours. Denison.
- The Colonel's Maid**, by C. L. Dalrymple. 6 m., 3 w. A comedy in 3 acts. 2 interiors. In order to overcome his father's prejudice against his fiancée, the daughter of an old rival, Bob Rudd has her enter the house as a maid. Her father comes to interfere, but after stormy interviews the two rivals consent to the match. Capital Chinese low comedy part; two first class old men. Time, 2 hours. Baker.
- Come Out of the Kitchen**, adapted by A. E. Thomas from the story by Alice Duer Miller. 6 m., 5 w. A comedy in 3 acts. 3 interiors. A most ingenious and entertaining comedy strongly recommended for amateur production. Time,  $2\frac{1}{2}$  hours. Royalty, \$25. French.
- The Conspirators**, by Evelyn Simms. 12 w. A comedy in 2 acts for girls only. 1 interior scene. The girls of the senior class at Miss Primleigh's school have been invited to a fancy dress dance. They are indignant at being forbidden to go. They conspire to make Miss Primleigh change her mind. Time, about 40 min. Fitzgerald.
- Contents Unknown**, by Lindsey Barbee. 7 m., 7 w. A comedy-drama of mystery in 3 acts. 1 exterior, 1 interior. To save her brother from exposure of an impulsive wrong-doing, a society girl is forced to aid in the smuggling of

- a stolen necklace, after which other complications arise. Time,  $2\frac{1}{2}$  hours. Denison.
- The Copperhead**, by Augustus Thomas. 9 m., 5 w. A drama in 4 acts. 1 exterior, 1 interior. Costumes of 1861 and 1903. A play remarkable in its appeal. Time,  $2\frac{1}{2}$  hours. Royalty, \$25. French.
- The Country Cousin**, by Booth Tarkington and Julian Street. 7 m., 6 w. Comedy in 4 acts. 2 interiors, 1 exterior. Humorous but with moments of tense drama and an under-lying note of seriousness. Time,  $2\frac{1}{2}$  hours. Royalty, \$25. French.
- A Couple of Million**, by Walter Ben Hare. 6 m., 5 w. A comedy in 4 acts. 2 interiors, 1 exterior. A young man falls heir to two million dollars on special condition. Plenty of comedy and a great variety of good parts, full of opportunity. Time,  $2\frac{1}{4}$  hours. Royalty, \$10. Baker.
- The Cousin from Coon Ridge**, by Harriet N. Connell. 5 m., 5 w. Comedy in 3 acts. 2 easy interiors. Ted Hampton persuades his college friends to help him entertain his cousin. There is a surprise for everyone. Time, 2 hours. Bugbee.
- Cousin Gene**, by Grace Delaney Goldenburg. 11 m. A comedy in 3 acts. One club room and one garden scene. Gene is a young man taking a young woman's part. Filled with comedy, suspense, and excitement. Time, 2 hours. Dramatic.
- Cousin Kate**, by Hubert Henry Davies. 3 m., 4 w. A comedy in 3 acts. 2 easy interiors. A charming piece, full of action and affording opportunity for original interpretations. Time,  $2\frac{1}{2}$  hours. Royalty, \$25. Baker.
- Cousins**, by Ross Farquhar. 6 m., 8 w. (Additional characters may be used for party scene.) Comedy-drama in 3 acts. An unusually desirable play for senior classes or dramatic clubs. Time, 2 hours. Royalty, \$10. Eldridge.
- Cranberry Corners**, by Arthur Lewis Tubbs. 6 m., 6 w. Comedy-drama in 4 acts. 1 interior, 1 exterior. A love story with lots of incidental comedy. Time,  $2\frac{1}{4}$  hours. Eldridge.
- A Crazy Idea**, by Maurice Hageman. 10 m., 8 w. A comedy in 4 acts. 1 interior scene. A jealous husband suddenly decides to put his home in the care of his nephew and take his wife and daughter to travel. The dialogue is strong and very humorous. Time,  $2\frac{1}{2}$  hours. Royalty, \$5. Dramatic.
- The Cricket on the Hearth**, from Charles Dickens. 6 m., 7 w. Drama in 3 acts. 3 interior scenes. A delightful, wholesome play of eternal dramatic interest, with the ties of home as its theme. Time, 2 hours. Baker.
- Cyclone Sally**, by Eugene Hafer. 4 m., 5 w. An uproarious comedy in 3 acts. 1 simple interior. An intensely interesting plot and loads of laughs are the ingredients of the play. All of the characters are splendid. Royalty, \$10. Eldridge.
- Daddy**, by L. H. Smith. 4 m., 4 w. Comedy in 3 acts. 2 easy interiors. A clever and amusing account of how Mr. Brown tries every means to keep away the admirers of his daughter. Time,  $1\frac{1}{2}$  hours. Baker.
- Daddy Long-Legs**, by Jean Webster. 6 m., 7 w., 6 orphans. (By easy doubling, may be played with 4 m., 4 w., and 3 orphans.) A charming comedy in 4 acts. 4 easy interiors. The New York Times reviewer wrote: "To attempt to describe the simplicity and beauty of 'Daddy Long-Legs' would be like attempting to describe the first breath of Spring after an exceedingly tiresome and hard winter." Time,  $2\frac{1}{2}$  hours. Royalty, \$25. French.
- Dandy Dick**, by A. W. Pinero. 7 m., 4 w. Farce in 3 acts. 2 interiors. The Rev. Augustus Jedd, oppressed by the high cost of living, places a bet on Dandy Dick, his sister's horse, and tries to make him win by administering a stimulating bolus. Very funny. Time,  $2\frac{1}{2}$  hours. Royalty, \$10. Baker.

- A Dangerous Experiment**, by Frances Saltonstall. 6 m., 3 w. Comedy in 2 acts. 1 simple interior. A play with an interesting, rapidly moving plot, giving an opportunity for two female character impersonations. A clever, clean comedy, smacking of college flavor. Time, 1 hour. Baker.
- Dave's Baby**, by Edith Palmer Painton. 3 m., 2 w. Clever comedy in 2 acts. A negro and an Irish servant furnish comedy parts. Action at Christmas time, but suitable for any occasion. Time, 1¼ hours. Eldridge.
- The Day Express**, by John M. Gilbert. 5 m., 4 w. A farce in 3 acts. 3 simple interiors. The action centers about a group of people whose day trip is followed from station to terminal. Excellent character parts. Time, 1 hour. Penn.
- The Deacon**, by Horace C. Dale. 8 m., 6 w. Comedy-drama in 5 acts. Abounds in humorous incidents and ludicrous situations and has a great deal of taking "farcical business". Time, 2½ hours. Fitzgerald.
- Deacon Dubbs**, by W. B. Hare. 5 m., 5 w. Rural comedy-drama in 3 acts. 1 scene throughout, a farmyard. A play of pathos, clean-cut rural comedy, and local color, centering around a comic, kind-hearted, wise old deacon. Time, 2¼ hours. Youmans.
- Dear Brutus**, by J. M. Barrie, from "Representative Plays." 5 m., 6 w. Comedy in 3 acts. A splendid play for experienced amateurs. Scribner's.
- Dearies**, by Alice Williams Chaplin. 9 w. Comedy in 3 acts. 2 easy interiors. A play for female characters alone, in which are blended pathos, intrigue, and humor, centering around an orphan's home. The dramatic situations are interspersed freely with comedy. Time, 2 hours. Youmans.
- The Delegates from Denver**, by Samuel N. Clark. 3 m., 10 w. Farcical comedy in 2 acts. 2 interior scenes. The action is absurdly farcical. A conspiracy is planned against Margaret, who is candidate for president of a sorority. Time, 45 min. Fitzgerald.
- The Detour**, by Owen Davis. 5 m., 4 w. A serious play in 3 acts. 1 interior, 1 exterior. A remarkable study of rural types. It concerns the efforts of a woman to free herself and realize the important things in life. For advanced amateurs. Time, 2 hours. Royalty on application. French.
- Dinner at Six**, by Arthur Lewis Tubbs. 2 m., 4 w., 1 child. A comedy in 2 acts. 1 interior. The wrong lady is invited to a dinner arranged to bring together two persons, once engaged, now long separated. Time, 40 min. Penn.
- Doctor Jim**, by Willis N. Bugbee. 7 m., 7 w., and supernumeraries. A comedy in 4 acts. 3 simple interiors. Doctor Jim, just out of college, opens an office and begins the practice of medicine. Relatives arrive to be cured of their complaints. Full of fun and action and ending with a good climax. Time, 2 hours. Bugbee.
- A Doll's House**, by Henrik Ibsen. 3 m., 4 w., 3 children. A play in 3 acts. 1 interior. A spoiled bride at last has to face and solve certain difficult problems for herself. She thus discovers just how much her husband's love and indulgence is worth. Recommended. Time, 2¼ hours. Baker.
- Doris Comes to Town**, by Eugene Hafer. 4 m., 4 w. A comedy in 3 acts. 1 easy interior. A clean, wholesome, farcical comedy which is based on an absurdly boastful untruth, the author of which meets with a humiliating exposure. Time, 2 hours. Royalty, \$10. Baker.
- Dorothy's Neighbors**, by Marie Doran. 4 m., 7 w. Comedy in 4 acts. 2 plain interiors, 1 exterior, a garden; or, if necessary, the 2 interiors will answer. The story is about vocational training and the distribution of large wealth. Back

- of the comedy situation is a sound moral. Particularly suited to high school production. Time,  $2\frac{1}{2}$  hours. Royalty, \$10. French.
- The Dover Road**, by A. A. Milne. 6 m., 4 w. A quaint, fantastic comedy, in 3 acts. 1 interior. Especially suited to advanced amateurs and clubs. Time, 2 hours. Royalty, \$50. French.
- Dulcy**, by George S. Kaufman and Marc Connelly. 8 m., 3 w. Comedy in 3 acts. 1 interior. A young bride, eager to be helpful to her husband, plans a weekend party. Her blunders unexpectedly bring success. Time,  $2\frac{1}{4}$  hours. Royalty, \$25. French.
- The Dummy**, by Harvey J. O'Higgins and Harriet Ford. 9 m., 3 w. A detective comedy in 3 acts. 3 interiors. Wrangling parents squabble over the possession of a child. Meanwhile "The Dummy" rescues her from kidnappers. Time,  $2\frac{1}{4}$  hours. Royalty, \$25. French.
- The Dutch Detective**, by W. B. Hare. 5 m., 5 w. A farce in 3 acts. 1 interior. A play which introduces characters developed along heightened farcical lines. Recommended for any organization which wishes something continuously funny. Time, 2 hours. Baker.
- An Early Bird**, by W. B. Hare. 7 m., 7 w. Comedy in 3 acts. 2 interiors. The son of a railroad president has been expelled from college. His father, greatly disappointed, puts the boy on his own resources. Tony makes a big success and wins a matrimonial prize. Time,  $2\frac{1}{4}$  hours. Denison.
- The Elopement of Ellen**, by M. J. Warren. 4 m., 3 w. Comedy in 3 acts. 1 interior and 1 exterior. In order to investigate the servant problem, a college girl gets a position as a maid and discovers she is in the house of one of her admirers. Many amusing situations arise. Time, 2 hours. Baker.
- The Empty House**, by Lindsey Barbee. 6 m., 8 w. A comedy-drama in 3 acts and epilogue. 2 interiors. The sight of strange lights in the empty house next door gives a young playwright an idea for a plot. The counter-current of comedy is strong, and the suspense is well worked up and sustained. Well suited to high school production. Time,  $2\frac{1}{2}$  hours. Denison.
- The End of the Lane**, by Lillian Mortimer. 5 m., 6 w. Comedy-drama in 3 acts. 1 exterior, 1 interior. To a penniless wanderer comes the bright idea of passing himself off as the long-lost son of a wealthy New York farmer, whose child was kidnapped twenty years before the opening of the play. Story appealing, comedy splendid. Time,  $2\frac{1}{2}$  hours. Royalty, \$10. Denison.
- The Enemy**, by Channing Pollock. 7 m., 3 w.; 1 child. A drama of the war in 4 acts. 1 simple living-room set. A young German author argues that "the enemy" is not a foreign nation, or race, but hate born of intolerance. Recommended to the more thoughtful and ambitious amateurs. Royalty, \$25. Longmans, Green.
- Engaged by Wednesday**, by G. A. Owen. 5 m., 11 w. Farce in 3 acts. An engagement entanglement, very easy, funny, and effective. Time,  $1\frac{1}{2}$  hours. Baker.
- An English Gentleman**, by Henry J. Byron. 7 m., 4 w. Comedy-drama in 4 acts. 2 interiors. A fine plot and a happy ending. Time,  $2\frac{1}{2}$  hours. Dramatic.
- Enter Madame**, by Gilda Varesi and Dolly Byrne. 5 m., 5 w., with supernumeraries. A romantic comedy in 3 acts. 1 simple interior. "Enter Madame" contrasts the artistic and scientific minds in marriage. Especially effective when well-performed and carefully directed for advanced amateur groups. Time,  $2\frac{1}{2}$  hours. Royalty, \$25. Longmans, Green.

- Entertaining Amelia**, by Thomas L. Marble. 6 m., 4 w. A comedy in 3 acts. 2 interiors, 1 exterior. The plot centers around the confused identity of twin brothers. Time, 1½ hours. Penn.
- Esmeralda**, by Frances Hodgson Burnett and William Gillette. 6 m., 5 w. A play in 4 acts. 3 interiors. One of the best known plays published in recent years. Especially recommended for high school pupils and amateurs. Time, 2¼ hours. Royalty, \$10. French.
- An Eveless Eden**, by Seymour S. Tibbals. 10 m. A farce in 2 acts. Easy stage setting and costumes. The wives of a group of tired business men take a two weeks vacation. The husbands run things to suit themselves. Excellent for any male organization. Musical numbers may be interpolated. Time, 1 to 2½ hours, depending upon specialties. Eldridge.
- Excuse Me**, by G. R. Bridgham. 4 m., 6 w. Comedy in 2 acts. 1 exterior, 1 interior. Robert Stetson gets a job on a big daily paper on condition that he makes good with an unusual sensation story in three days. An exciting piece of comedy with exceptionally good parts. Time, 1½ hours. Baker.
- Eyes of Love**, by Lillian Mortimer. 5 m., 5 w. Comedy-drama in 3 acts. 1 interior. A charming tale of a father's love and a daughter's devotion under adverse circumstances. A variety of characters including a villain, a negro mammy, a flirtatious housemaid, a detective, and Trusty Jim, the man of mystery. A strong play with good action and comedy. Time, 2 hours. Youmans.
- Facing the Music**, by James H. Darnley. 5 m., 4 w. Comedy in 3 acts. 1 interior. There are three Smiths—the Rev. John Smith, John Smith, and Colonel Duncan Smith. Amusing entanglements result. Time, 2 hours. Royalty, \$10. French.
- A Family Affair**, by Charles Townsend. 3 m., 3 w. A comedy in 3 acts. 2 easy interiors. The main idea of the play is based upon M. George Feydeau's farce of "Prête-moi ta Femme"—that of borrowing a wife. Time, 2 hours. Penn.
- The Family Upstairs**, by Harry Delf. 4 m., 5 w. Comedy in 3 acts. 1 interior. A typical picture of life in an average American home. Interesting love story. Time, 2 hours. Royalty on application. French.
- The Famous Mrs. Fair**, by James Forbes. 3 m., 10 w. Comedy in 4 acts. 2 interiors. Concerns an ambitious lady who returns from overseas to lecture, and consequently neglects her daughter. Time, 2 hours. Royalty, \$25. French.
- Fanny and the Servant Problem; or, The New Lady Bantock**, by Jerome K. Jerome. 5 m., 17 w. A comedy in 4 acts. 1 interior. The title suggests the fun. A good play, easy to produce. Time, 2½ hours. Royalty, \$25. French.
- The Farmerette**, by E. G. Whiting. 7 w. Comedy in 3 acts. 1 interior. An excellent little drama portraying the efforts of several girls to maintain the family farm without masculine assistance. Time, 2 hours. Baker.
- Fickle Fortune**, by Sally Shute. 4 m., 8 w. Comedy in 3 acts. 2 easy interiors. An excellent story with plenty of good comedy, startling situations, and an astonishing climax. "As good as a royalty play." Time, 2 hours. Baker.
- The First Year**, by Frank Craven. 5 m., 4 w. A comic tragedy of married life, in 3 acts. 2 interiors. A comedy which shows real life in an everyday sort of story, so well handled that it makes entertainment of the highest quality. Time, 2¼ hours. Royalty quoted on application. French.
- A Fisherman's Luck**, by W. P. Gatchell. 6 m., 4 w. A drama in 4 acts. 4 interiors. The characters are rustic and searing. Situations arouse warm sympathy and easy laughter. Time, 2 hours. Baker.
- Fixing It for Father**, by J. C. McMullen. 6 m., 5 w. A farce in 3 acts. 1 easy interior. A staid professor's daughters and their boy "friends" fix things



- for father. Characters of equal importance. A snappy farce. Time, 2 hours. Royalty, \$10. Baker.
- A Football Romance**, by Anthony E. Wills. 9 m., 4 w. A college comedy in 4 acts. 1 interior, 2 exteriors. A play abounding in the stirring atmosphere of college life and the spirit of the great college game of football. Recommended highly for high schools and colleges. Time,  $2\frac{1}{2}$  hours. Fitzgerald.
- Forest Acres**, by Fannie Barnett Linsky. 5 m., 8 w. (Some doubling if desired.) Comedy in 3 acts. 2 simple interiors. A story of life on a New England farm. Good character parts. Time,  $2\frac{1}{4}$  hours. Baker.
- For One Night Only**, by R. M. Baker. 5 m., 4 w. A comedy in 4 acts. 1 easy interior. Professor Goldwhinney attempts to write a play. What happened to him, to his Roman tragedy, and to Spartan Spurgeon Spotts, the itinerant tragedian who produced it, carries us through four acts of undiluted mirth. Ideal for amateurs. Time,  $2\frac{1}{2}$  hours. Baker.
- The Four-Flusher**, by Caesar Dunn. 8 m., 5 w. A comedy in 3 acts. 2 interiors. A comedy of hustling American youth. An amusing story of a young shoe clerk who through cleverness, personality, and plenty of wholesome faith in himself becomes a millionaire. Recommended to high schools. Time,  $2\frac{1}{4}$  hours. Royalty, \$25. French.
- A Full House**, by Fred Jackson. 7 m., 7 w. A farcical comedy in 3 acts. 1 interior. "A Full House" is a house full of laughs. The lines themselves hold a fund of humor. One of the newest and cleverest farces. Time,  $2\frac{1}{2}$  hours. Royalty, \$25. French.
- Galliger**, by Rea Woodman. 4 m., 8 w. A high school comedy in 3 acts with a prologue. 3 interiors. A play based on high-school antics. Time, 2 hours. Eldridge.
- Getting Acquainted with Madge**, by J. C. McMullen. 7 m., 5 w. A farce in 3 acts. 2 easy interiors. Jerry loses a letter from Madge which is found by some boys. The boys plot to become acquainted with Madge. They meet Madge, also Jerry, but become entangled in some very laughable and humiliating disasters. Time, about 2 hours. Eldridge.
- Getting Even with Reggie**, by Seymour S. Tibbals. 5 m., 8 w., with supernumeraries. A comedy in 3 acts. 1 interior, 1 exterior, easily arranged. An ideal class play that will fill a long-felt need. A clever American girl, posing as a Persian princess, is used by Reggie's classmates in their scheme to get even with him. Time, 2 hours. Royalty, \$5. Eldridge.
- The Ghost Breaker**, by Paul Dickey and Charles Goddard. 9 m., 3 w. Melodramatic farce in 4 acts. 5 interiors, 1 exterior. Costumes, modern and Spanish. The play abounds in suspense and action. Time, 2 hours. Royalty, \$25. French.
- The Gipsy Trail**, by Robert Housum. 5 m., 4 w. Comedy in 3 acts. 1 interior, 1 exterior. Concerns an adventurous millionaire in quest of real romance. Mystery, romance, character, and humor are combined. A good play for schools and colleges. Time,  $2\frac{1}{2}$  hours. Royalty, \$25. French.
- Give and Take**, by Aaron Hoffman. 5 m., 1 w. Farce-comedy in 3 acts. 1 interior. The son of a manufacturer seeks to apply his communistic ideas. Vastly amusing, yet a splendid lesson to live and let live. Time, 2 hours. Royalty, \$25. French.
- The Gold Bug**, by Walter Ben Hare. 7 m., 7 w. Comedy in 4 acts. 2 easy interiors. Edgar Allan Poe's immortal story, "The Gold Bug," is the inspiration and basis of this comedy. The story is full of brilliant dialogue, humorous incidents,

- and surprises, and contains a touch of pathos. Time,  $2\frac{1}{4}$  hours. Royalty \$15. Denison.
- The Good Natured Man**, by Oliver Goldsmith. 12 m., 5 w. Comedy in 5 acts 4 easy interiors. Costumes, 18th century. Has easy flow of humor, sprightliness of character, and elegance of language. Amusing incidents. Time about  $2\frac{1}{4}$  hours. French.
- The Goose Hangs High**, by Lewis Beach. 7 m., 6 w. Comedy in 3 acts. 1 interior. Portrays with great good humor and truth the efforts of a modern family to adjust themselves to difficult circumstances. Time,  $2\frac{1}{4}$  hours. Royalty, \$50. French.
- Go Slow, Mary**, by Lillian Mortimer. 6 m., 5 w. Farce-comedy in 3 acts. 1 easy interior. Billy and Mary Abbey, a young married couple, decide to exchange jobs. A delightful play. Time, 2 hours. Denison.
- A Great Success**, by William Winkle. 8 m., 5 w. A comedy in 3 acts. 2 interiors and 2 exteriors. An effective play. Characters excellent and varied. Time,  $2\frac{1}{2}$  hours. Dramatic.
- Green Stockings**, by A. E. W. Mason. 7 m., 5 w. A delightful comedy in 3 acts. 2 interiors. A comedy of unalloyed delight in which Margaret Anglin charmed capacity audiences everywhere. A very popular play with amateurs. Time,  $2\frac{1}{2}$  hours. Royalty, \$25. French.
- The Haddon Hall Mystery**, by Beulah King. 4 m., 7 w. A 3-act comedy-drama of the desirable type. 2 interiors. A charming young girl is handicapped by the name of *Mehitable Maud*. In an attempt to escape the name, the girl finds strange events happening to her. Time, 2 hours. Eldridge.
- The Heart of a Hero**, by Arthur Lewis Tubbs. 6 m., 7 w. A domestic drama in 4 acts. 1 exterior and 2 interiors. Time, 2 hours. Penn.
- The Heart of Paddy Whack**, by Rachael Crothers. 6 m., 6 w. Comedy in 3 acts. 1 interior, 1 exterior. Irish costumes of 1830. A romantic and whimsical mixture of genuine folks—comedy and sentimental drama. Time,  $2\frac{1}{2}$  hours. Royalty, \$25. French.
- The Heavenly Twins**, by Lillian S. Schreiner. 4 m., 9 or more w. A school farce in 3 acts. 2 interiors, 2 exteriors. A most popular farce depicting college pranks. Time, 45 min. Flanagan.
- The Heiress Hunters**, by Walter Ben Hare. 7 m., 7 w. A comedy in 3 acts. 2 interiors, 1 exterior. A starving author, an artist, and a musician compete for the affections of *Widow Wood*. Highly amusing. Time,  $2\frac{1}{4}$  hours. Baker.
- Held for Postage**, by Robert Henry Diehl. 4 m., 3 w. A rural farce-comedy in 2 acts. 1 interior. Many humorous episodes of Yankee life. Time,  $1\frac{1}{4}$  hours. Fitzgerald.
- Her Gloves**, by Anthony E. Wills. 5 m., 5 w. A farce in 3 acts. 1 interior. Lively, full of complications, uproariously funny. A sure success. Time, 2 hours. Royalty, \$5. Dramatic.
- Her Honor the Mayor**, by Mary Modena Burns. 3 m., 5 w. A farcical satire in 3 acts. 1 interior. *Eve Greenway* dreams that the women are running the town and making the laws and the men running sewing machines and making beds. Especially recommended for women's clubs. Time, 2 hours. Denison.
- Hicks at College**, by Sara Preston, Amy Oliver and Ralph Dyar. 12 m., 9 w. 3 easy interiors. A jolly, lively piece full of comedy and action. Well adapted to the needs of schools and colleges and amateurs everywhere. Time, 2 hours. Royalty, \$5. Dramatic.

- The Hidden Hand**, by Robert Jones. 15 m., 7 w. Drama in 5 acts. 4 interiors, 2 exteriors. Thrilling drama, with strong comedy scenes as well. An excellent negro part. Time, 2½ hours. Dramatic.
- Higbee of Harvard**, by C. Townsend. 5 m., 4 w. A comedy in 3 acts. 2 interiors, 1 exterior. A clean, laugh-compelling comedy, entirely without impossible situations. Contrasts the culture of the East with the rough vigor of the cattle regions of the West. Time, 2 hours. Baker.
- His Best Investment**, by Lindsey Barbee. 5 m., 9 w. A comedy-drama in prologue and 3 acts. 2 interiors. A circus waif is impulsively adopted by Cortland, who places her in a school and enlists for the World War the next day. The child loses trace of the young man until he becomes engaged to her best friend. A strong plot well handled. Time, 2½ hours. Eldridge.
- His Father's Son**, by G. R. Bridgham. 14 m. Comedy in 3 acts. 2 interiors. The story of a student who discovers that his father, through self-sacrifice, is supporting him in luxury. He leaves school at once, is suspected of theft, but finally vindicates himself. Time, 1¾ hours. Baker.
- His Uncle's Niece**, by Raymond W. Sargent. 6 m., 3 w. A rollicking farce in 3 acts. 1 interior, 1 exterior. Uncle Simon selects a husband for his "niece", Francis, who assumes a female character role for the sake of a bequest from the uncle. Time, 2 hours. Baker.
- A Hole in the Fence**, by E. B. Tiffany. 4 m., 3 w. A farce-comedy in 2 acts. 1 exterior. Irish, negro, and Swedish comedy parts. Very amusing and not difficult. Time, 1 hour. Baker.
- Home Acres**, by Arthur Lewis Tubbs. 5 m., 5 w. A drama in 3 acts. 2 interiors. The story of a college youth reared in the country, who is urged to sell his farm and live in New York where "real life" exists. Various events lead to catastrophe. The last act brings the characters back to the country. Time, 2 hours. Penn.
- Honor Bright**, by Meredith Nicholson and Kenyon Nicholson. 9 m., 6 w. Comedy in 3 acts. 1 interior. Dick Barrington asks Honor Bright, a college student book agent to pose as his fiancée. The real fiancée arrives unexpectedly. Time, 2½ hours. Royalty, \$25. French.
- The Hoodoo**, by Walter Ben Hare. 6 m., 12 w., 4 children. A farce in 3 acts. 1 interior, 1 exterior; or, a single interior. The plot centers around the gift of an evil-producing Egyptian scarab. The professor's son and Paradise, the colored cook, afford exceptional character parts. Recommended for schools. Time, 2 hours. Baker.
- The Hoot Owl**, by Bell Elliott Palmer. 4 m., 7 w. A capital light comedy in 2 acts. 1 easy interior. A boarding school extravaganza in which the girls fool their head mistress in a very outrageous fashion. Baker.
- The House Across the Way**, by Lee Owen Snook. 6 m., 7 w. Comedy-drama in 4 acts. 1 exterior, 2 interiors. The efforts of 4 college boys to keep near 4 college girls are the source of many amusing incidents and a thrilling escapade. Time, 2 hours. Eldridge.
- The House Next Door**, by J. H. Manners. 8 m., 4 w. Comedy in 3 acts. 2 interiors, not difficult. The old story of Romeo and Juliet retold in modern times. A fine play, richly sympathetic and easily performed by amateurs. Royalty, \$10. Baker.
- The Hraun Farm**, by Johann Sigurjónsson, from "Short Plays by Representative Authors" edited by A. M. Smith. 3 m., 3 w., 2 children, 6 servants. A drama in 3 acts. 1 exterior with variations. Portrays the struggle of the father

between love for his land and love for his daughter. Royalty on application. Macmillan.

**Hunkers' Corners**, by Adelaide H. Wyeth. 12 m., 14 w. An entertainment in 3 scenes, arranged with one setting,—a country store and postoffice. Characters range from Bill Hunkers and his darky boy to stylish automobilists. Churches, schools, and societies will find this a good play for raising funds. Royalty, \$5. Dramatic.

**Husbands on Approval**, by William M. Blatt. 6 m., 4 w. Comedy in 3 acts. 2 interiors. Nancy invites her four admirers to spend a month as guests in her family. She loses all of them except the hero. Time, 2 hours. Royalty, \$10. Baker.

**The Hut**, by Fannie Barnett Linsky. 11 m. Comedy in 3 acts. 1 easy interior. The plot is interesting and different, and provides for humorous situations and snappy dialogue. Plenty of laughs and thrills with some drama. Time, about 2 hours. Baker.

**Icebound**, by Owen Davis. 5 m., 6 w., 1 child. A comedy-drama in 3 acts. 1 interior. "Icebound" has to do with cold personalities rather than with frigid climates. This play won the Pulitzer prize for 1923. Recommended to universities, little theater groups, and large high schools. Royalty, \$25. Longmans, Green.

**If I Only Had a Million**, by Jay Clay Powers. 7 m., 6 w. Comedy in 3 acts. 2 interiors. Mr. John Smith would do fine things if he only had "a million". He gets his million and then things are—different. Time, 2 hours. Baker.

**If I Were King**, by Justin Huntly McCarthy. 20 m., 9 w. A play in 4 acts. 1 exterior, 3 interiors. Costumes, period of Louis XI. The plot deals with the adventures of François Villon, a vagabond poet of France in the fifteenth century. Time, 2½ hours. Royalty, \$25. French.

**The Imaginary Invalid**, by Molière. 8 m., 4 w. Comedy in 3 acts. 1 interior. Costumes, 17th century. An exceedingly amusing satire, not only upon those who imagine they are ailing, but upon human nature in general. Easily produced. Time, 1½ hours. French.

**I'm Cured; or Nearly a Film Star**, by C. N. Bourholtzer. 8 w. A comedy in 2 acts and prologue. 2 interiors. A would-be film star renounces her ambition. All characters good. Time, 1 hour. Fitzgerald.

**In a Garden**, by Philip Barry. 4 m., 2 w. Comedy in 3 acts. 1 interior. A high and very subtle comedy on the readjustment of human relations in marriage. For advanced amateurs. Time, 2 hours. Royalty on application. French.

**In His Arms**, by Lynn Starling. 4 m., 6 w. Comedy in 3 acts. 2 interiors. A young woman is mistakenly engaged to wed a priggish young man. Many queer things happen when she meets a more dashing wooer. Clever, easy to produce. Time, 2¼ hours. Royalty, \$25. French.

**In Hot Tamale Land**, by Geoffrey F. Morgan. 6 m., 4 w., a chorus of any size. Musical comedy in 2 acts. One stage setting in the tropics. Bobby must earn \$10,000 before Eleanor's father will consent to their marriage. When the bull-fighter's union calls a strike, Bobby volunteers as a strike breaker. Ideal for high school or college production. 2 hours of solid laughter. Denison.

**In Plum Valley**, by Charles Ulrich. 6 m., 4 w. Rural comedy-drama in 4 acts. 2 exteriors, 1 interior. A double-dyed villain seeks to fasten his crimes on others and is defeated by the woman he has wronged. Through the play runs a tender love story and plenty of lively rustic comedy. Time, 2¼ hours. Denison.

**In Search of Carolyn**, by Beulah King. 4 m., 6 w. A comedy in 3 acts. 2 interiors. Carolyn disappears because she doesn't want to be married to an English Earl.

- Humorous complications with a snappy ending. Recommended to high schools. Royalty, \$5. Eldridge.
- In the Days of '76**, by Lillian S. Schreiner. 6 m., 5 w., and others as desired. A drama in 4 acts. 2 exteriors, 1 interior. Costumes of the Revolutionary period. A romantic story of men's love for their country. Time 2 hours. Flanagan.
- In the Next Room**, by Eleanor Robson and Harriet Ford. 8 m., 3 w. Melodrama in 3 acts. 2 interiors. A first-rate mystery play centering around the possession of an original Boule cabinet which is desired by many persons. Contains all the elements of suspense, curiosity, comedy and drama. Recommended to high schools and colleges. Time,  $2\frac{1}{4}$  hours. Royalty, \$25. French.
- The Intimate Strangers**, by Booth Tarkington. 4 m., 4 w. A delightful comedy in 3 acts. 2 interiors. A girl of yesterday and a lawyer of uncertain age are stranded in an old railway station because of a hurricane. Very clever. Time,  $2\frac{1}{2}$  hours. Royalty, \$25. French.
- It Pays to Advertise**, by Roi Cooper Megrue and Walter Hackett. 8 m., 3 w. Farce in 3 acts. 2 interiors. An amusing story, consistently carried through. One of the liveliest comedies seen in a long time. Time,  $2\frac{1}{2}$  hours. Royalty, \$25. French.
- Jack O'Hearts**, by E. M. Burrows. 4 m., 4 w. Comedy in 3 acts. 1 interior. John Ames, a young clergyman friend of Polly's brother, is mistaken for an expected relative and given by Polly a cousinly kiss. Amusing consequences follow. Time,  $1\frac{1}{4}$  hours. Baker.
- The Jury of Our Peers**, by Edward Peple. 13 m., 17 w. Comedy in 3 acts. 2 interiors. Six men contrive a bogus breach-of-promise suit to be tried by female lawyers before a jury of women, on the masculine supposition that no twelve women can agree on anything. Time,  $2\frac{1}{2}$  hours. Royalty, \$25. French.
- Just for Fun**, by E. M. Crane. 2 m., 4 w. Up-to-date society comedy in 3 acts. 1 interior. Miss Morton and Miss West change places and Lord Chelsea and Mr. Earl borrow each other's names and positions for a month. Amusing complications develop. Time, 2 hours. Fitzgerald.
- Just Like Judy**, by Ernest Denny. 4 m., 5 w. Comedy in 3 acts. 1 interior. When Beatrice becomes annoyed at Peter, Judy decides to marry him herself. Very amusing and clever. Time,  $2\frac{1}{2}$  hours. Royalty, \$25. French.
- Kempy**, by J. C. Nugent and Elliot Nugent. 4 m., 4 w. A delightful comedy in 3 acts. 1 interior. An ideal entertainment for amusement purposes. A high-falutin' daughter in a fit of pique marries a young plumber-architect. Time,  $2\frac{1}{2}$  hours. Royalty, \$25. French.
- A Kentucky Belle**, by T. Bell Chambers. 8 m., 7 w., some minor parts. Southern comedy in 3 acts. 1 easy interior. Miss Mariah Douglas, a Southern aristocrat, wishes her niece Isabel to marry Colonel McMillen. Isabel, the lovely owner of Kentucky Belle, a race horse, admires a handsome student who is temporarily a lineman. Time, 2 hours. Youmans.
- Kicked Out of College**, by Walter Ben Hare. 10 m., 9 w. College farce in 3 acts. 2 interiors. The most popular boy in college is so busy with an invention and his various activities that he is expelled, but later makes good and is allowed to re-enter. An excellent comedy. Time,  $2\frac{1}{4}$  hours. Denison.
- The Kidnapped Freshman; or, The Sophomore's Joke**, by F. T. Vreeland. 12 m. 4 w. and extra students as desired. College farce in 3 acts. 2 interior scenes. Stephen is kidnapped by sophomores and lost for four days. He is eventually rescued by Mable, his fiancée. The rôles are good, the dialogue bright, and the action brisk. Time,  $2\frac{1}{4}$  hours. Fitzgerald.

- Kindling the Hearth Fire**, by Estelle Cook. 5 m., 6 w. A rural drama in 3 acts. 3 interiors. An excellent play that is an argument for more conveniences in farm homes. Recommended to rural clubs. Agricultural Extension Division, University of Minnesota.
- The Kingdom of Heart's Content**, by Lindsey Barbee. 6 m., 12 w. College comedy in 3 acts. 1 simple exterior, 1 interior. The plot involves school honor, a football game, and an undercurrent of love. Brimful of comedy. Time, 2¼ hours. Youmans.
- The Ladies of Cranford**, by M. B. Horne. 13 w. A play in 3 acts. 2 simple interiors. Costumes, mid-Victorian. A standard adaptation from Mrs. Gaskell's novel. A delightful dramatization for a high class performance. Time, 2 hours. Baker.
- Lady of the Rose**, by Martin Flavin. 7 m., 2 w. A play in 3 acts. 3 interiors. A serious study of a dramatist to understand himself. A very effective play for advanced amateurs and little theater groups. Time, 2½ hours. Royalty, \$25. French.
- La Locandiera** (The Mistress of the Inn), by Carlo Goldini. 5 m., 3 w. A farce in 3 acts. 1 interior, with variations. A good example of 18th century comedy, being delightful in dialogue, characterization, and situations. Well suited to girls' schools where costume plays are preferred. Royalty, \$25. Longmans, Green.
- The Lamp and the Bell**, by Edna St. Vincent Millay. 5 m., 6 w., courtiers, ladies-in-waiting, soldiers, pages, musicians, townspeople, children. A 5-act drama in blank verse. 4 exteriors, 5 interiors, with variations. A dramatic story of the friendship of two queens. For full effectiveness the play should be given with some elaborateness of production. Time, 2½ hours. Royalty, \$25. Baker.
- The Lancashire Lass**, by Henry J. Byron. 12 m., 3 w. Domestic melodrama in a prologue and 4 acts. 3 exteriors, 5 interiors. This picturesque play is very effective. Time, 3 hours. Dramatic.
- The Last Chance**, by Annie E. Bailey. 2 m., 12 w. A comedy in 2 acts. 1 simple interior. A group of girls chaperoned by Aunt Charity are stranded in a boarding house where no men are to be taken. Two young men friends disguise themselves and obtain rooms. Witty and bright dialogue. Time, 1½ hours. Fitzgerald.
- The Laughing Cure**, by Edith F. A. U. Panton. 4 m., 5 w. Comedy in 2 acts. 1 interior. A woman without a sense of humor is the cause of much distress to herself and those about her. A young doctor takes the case and prescribes one laugh regularly every 30 minutes. Full of fun and action. Time, 1¾ hours. Youmans.
- Lazy Bob Parkins**, by Ward Macauley. 6 m., 7 w. Comedy in 3 acts. 2 interiors. Bob is a great reader, but "lazy". A city girl comes to town and Bob wakes up. Time, 2 hours. Penn.
- Leave It to Judkins**, by E. Osgood. 4 m., 5 w. A clever comedy in 3 acts. 1 interior. Amos Petergun tries to conceal the fact that he is writing a play. An amusing and splendid plot. Wide variety of characters. Time, 2 hours. Youmans.
- Lightnin'**, by Winchell Smith and Frank Bacon. 12 m., 12 w. A play in prologue and 3 acts. 3 interiors. One of the most successful plays of modern times. Bill Jones saved his wife and niece from poverty, and in court pleaded his own case with striking success. Time, 2½ hours. Royalty quoted on application. French.
- The Light of the World**, by Guy Bolton and George Middleton. 13 m., 5 w., and supernumeraries. A modern drama in 3 acts. 1 exterior, 1 interior. A power-

- ful and beautiful story of the Passion Players. For advanced amateurs and little theater groups. Royalty on application. French.
- Listen, Ladies**, by Emma J. True. 10 w. Comedy in 2 acts. 2 easy interiors. A church club of ladies, at afternoon tea, discuss the raising of a fund for the building of the new town library. Good for women's clubs and church dramatic circles. Time,  $1\frac{1}{4}$  hours. Baker.
- A Little Clodhopper**, by Walter Ben Hare. 3 m., 4 w. A comedy-drama in 3 acts. 2 interiors. The little clodhopper from the poorhouse finds happiness at last after many trials. A play of fun and pathos. Time, 2 hours. Youmans.
- A Little Journey**, by Rachael Crothers. 8 m., 7 w. A comedy in 3 acts. 1 interior, 1 exterior. A young woman, through the stress incident to a railway accident, learns a great lesson in human kindness. Time,  $2\frac{1}{4}$  hours. Royalty, \$25. French.
- A Little Savage**, by Eleanor Crane. 4 m., 4 w. A military comedy in 3 acts. 1 interior. A matrimonial scheme is exposed by Ruth, the little savage. Time, 2 hours. Fitzgerald.
- Loggerheads**, by Ralph Cullinan. 3 m., 2 w. Comedy in 3 acts. 1 interior. Modern Irish costumes. A highly imaginative comedy of character. A splendid play for little theaters and advanced amateurs. Time,  $2\frac{1}{2}$  hours. Royalty, \$25. French.
- Lonesome Mile**, by George M. Rosener. 7 m., 2 w. A western comedy in 2 acts. Easily arranged interior. A strong and thrilling drama with intensity, humor, suspense, and pathos. Time,  $1\frac{3}{4}$  hours. Royalty, \$5. Dramatic.
- Lone Star**, by Oliver P. Parker, from "Portfolio of Parker Plays". 7 m., 6 w. A western comedy-drama in 5 acts. Time,  $2\frac{1}{2}$  hours. Royalty, \$5. Parts furnished on payment of royalty. National Drama.
- Lost—A Chaperon**, by C. Bruerton and W. S. Maulsby. 6 m., 9 w. A comedy in 3 acts. 1 interior, 1 exterior. An excellent comedy with the true college atmosphere, but with its scenes in camp away from actual college life. Recommended for high school performance. Time, 2 hours. Baker.
- The Lost Pleiad**, by Jane Dransfield. 10 m., 8 w., and extras. A poetic fantasy in 2 acts. May be played indoors or out, and is suitable for all-girl cast. Greek costumes. A delightful play which affords opportunity for dramatic expression. Royalty, \$15. Longmans, Green.
- Love a la Carte**, by Adam Applebud. 4 m., 5 w. Farce in 3 acts. 1 interior. A play which abounds in original situations, humor, and snappy lines. Easy to play. Easy to stage. Easy to laugh at. Time, 2 hours. Baker.
- Love 'Em and Leave 'Em**, by George Abbott and John V. A. Weaver. 6 m., 4 w. Comedy in 3 acts. 3 interiors. An ingeniously amusing play concerning the adventures of two sisters making their way in the world. For advanced amateurs and college groups. Time, 2 hours. Royalty on application. French.
- A Lucky Break**, by Zelda Sears. 9 m., 9 w., and extras (or, 5 m., 7 w., and no extras). A farce-comedy in 3 acts. 1 simple hotel office set. Interpretative of small town life, appealing strongly to all who like hilarious American comedy. Royalty, \$25. Longmans, Green.
- Maidens All Forlorn**, by Evelyn Simms. 6 w. A comedy in 3 acts. 1 interior. Three girls, chafing under the monotony of a man-forsaken resort, write a doctor to visit them. The doctor arrives—a woman. Time,  $1\frac{1}{4}$  hours. Fitzgerald.
- Mail Order Brides**, by J. C. McMullen. 6 m., 7 w. A farce-comedy in 3 acts. 1 simple interior. A story of the Nevada cattle range, written by one familiar with his subject. Two cowboys order brides and one too many arrives. Char-

acters good; particularly, the part of the Indian squaw. Time, 2 hours. Royalty, \$10. Baker.

**Mamma's Affair**, by Rachel Barton Butler. 3 m., 4 w. A delightful comedy in 3 acts. 2 interiors. The story of a sentimental hypochondriac. A charming play for high schools. Time, 2¼ hours. Royalty, \$25. French.

**Mammy's Lil' Wild Rose**, by Lillian Mortimer. 5 m., 7 w. Comedy-drama of the sunny south in 3 acts. 1 exterior. A pretty love story with three capital comedy rôles. Time, 2¼ hours. Denison.

**The Man From Home**, by Booth Tarkington and H. L. Wilson. 12 m., and extras, 3 w. A comedy in 4 acts. 1 interior, 2 exteriors. An excellent play. Unusual interest and suspense. Royalty on application. Youmans.

**The Man in the Case**, by W. Packard. 6 w. Comedy in 3 acts. 2 interiors. An original plot with much wit and good-natured satire on the foibles of Bostonese traditions. Time, 2 hours. Baker.

**The Man Without a Country**, a free adaptation of Dr. Hale's story, by G. R. Bridgham. 46 m., 5 w. Scenery not important. An entertainment in 6 scenes. Costumes, military of the several periods. No more vivid lesson in patriotism was ever written. Strongly recommended for schools. Time, 1½ hours. Baker.

**Margery Makes Good**, by L. C. Bridgham. 6 m., 10 w. A comedy in 2 acts. 1 interior. A play of college social life. Time, 1 hour. Baker.

**Martha-By-The-Day**, by Julie M. Lippmann. 5 m., 5 w. An optimistic comedy in 3 acts. 3 interiors. Altogether a gentle, excellent play, full of quaint humor, and old-fashioned, homely sentiment. Time, 2½ hours. Royalty, \$25. French.

**Mary's Millions**, by Frederick G. Johnson. 5 m., 6 w. Comedy in 3 acts. 1 exterior, 1 interior. A quiet New England village is all agog over the arrival of two "titled foreigners" who scheme to get Mary's fortune. Natural and with genuine humor. Time, 2½ hours. Royalty, \$15. Denison.

**The Masonic Ring; or, The Adventures of a College Bride**, by Louise Rand Bascom. 3 m., 6 w. A farce-comedy in 3 acts. The plot involves the mystery of the supposed Masonic ring worn by the young wife. Suitable for commencement, colleges, clubs, churches. Time, 2 hours. Eldridge.

**Master Pierre Patelin**, by R. T. Holbrook. 4 m., 1 w. Farce in 3 acts. 3 very simple interiors. Costumes of the period. One of the most famous of early French farces. Concerns the crooked dealings of a clever lawyer. Recommended for schools and colleges. Time, 1½ hours. Baker.

**Meet the Wife**, by Lynn Starling. 5 m., 3 w. Comedy in 3 acts. 1 interior. Gertrude Lennox, twice married, but still "the captain of her soul", has a fancy for celebrities. Time, 2 ¼ hours. Royalty on application. French.

**The Melody of Youth**, by Brandon Tynan. 5 m., 5 w. A comedy in 3 acts. 2 interiors, 1 exterior. Costumes, 1830. An extremely actable play which will prove popular with schools, churches, convents, and dramatic clubs. Time, 2¼ hours. Royalty, \$25. French.

**A Mennonite Maid**, by Helen Martin and Frank Howe, Jr., founded on the novel by the same name. 7 m., 5 w. A comedy in 4 acts. 1 exterior, 1 interior. Treats of the Mennonites of the Pennsylvania Dutch and in a comic manner shows their unusual mode of life. Time, 2 hours. Royalty on application. Longmans, Green.

**The Merchant of Venice Up to Date**. 9 m., 7 w. Comedy in 5 acts. 1 interior, 3 exteriors. A burlesque of Shakespeare's play, particularly adapted to the requirements of high schools and colleges. Time, 2 hours. Dramatic.



- Merely Anne Marie**, by Beulah King. 3 m., 5 w. A comedy in 3 acts. 2 interiors. A successful playwright, desiring to escape notoriety, seeks seclusion at Mrs. Teague's, and becomes the hero of Anne Marie, the dining room maid. The dialogue is bright and situations clever. Time, 2½ hours. Eldridge.
- Merton of the Movies**, by George S. Kaufman and Marc Connelly. 7 m., 4 w. A comedy in 4 acts. 5 easily arranged scenes. As a stirring story, a picture of American youth, an interesting commentary on motion pictures, and an intensely human study of character, it has few equals. Time, 2¼ hours. Royalty, \$25. French.
- Minick**, by George S. Kaufman and Edna Ferber. 6 m., 9 w. A character comedy in 3 acts. 1 interior. A story, comic and pathetic, of an old man who comes to live with his son and daughter-in-law. Especially good for clubs and high schools. Time, 2¼ hours. Royalty, \$25. French.
- The Mishaps of Minerva**, by B. C. Porter. 5 m., 8 w. A farce in 2 acts. 1 interior. Minerva's friends, to keep her from wearing herself out in charity work, try to break up her reception by robbing the house. Time, 1½ hours. Baker.
- The Misplaced Decimal**, by John M. Francis. 3 m., 7 w. A comedy in 3 acts. 1 interior. A college comedy, affording opportunity for the introduction of local hits and musical incidentals. Characters, popular college types. Time, 1½ hours. French.
- Miss Buzby's Boarders**, by A. L. Tubbs. 5 m., 6 w. Comedy in 3 acts. 2 easy interiors. A young woman, with the help of a vaudeville actress, clears herself of a false accusation. Time, 2 hours. Baker.
- The Missing Miss Miller**, by H. A. Clarke. 6 m., 5 w. Comedy in 3 acts. 2 interiors. All parts good. Hymen Trouble's Matrimonial Agency is the starting point of a good plot and the scene of lots of funny incidents. Time, 2 hours. Baker.
- The Mission of Letty**, by Evelyn Watson. 8 w. Play in 2 acts. 1 easy interior. A sweet-natured young girl revolutionizes the lives of two unhappy old ladies. Time, 1½ hours. Baker.
- Miss Molly**, by Elizabeth Gale. 3 m., 5 w. Comedy in 2 acts. 1 interior. A play which is full of fun, easy to produce and appealing to amateurs. Time, 1 hour. Youmans.
- Molly's Aunt**, by Louise Rand Bascom. 3 m., 4 w. Farce in 3 acts. 1 interior. An exceedingly lively comedy in which Aunt Molly figures in many amusing misunderstandings. Time, 2¼ hours. Eldridge.
- Money**, by Bulwer-Lytton. 17 m., 3 w. Comedy in 5 acts. 6 fashionable interiors. This successful play, full of fine situations, has always held a commanding position in public favor. Time, 2 hours. French.
- Mother Carey's Chickens**, by Rachel Crothers and Kate Douglas Wiggin, based on the latter's story. 7 m., 7 w. 3-act play. 1 interior. An ideal play for high schools. Its chief virtues are its very human characters. Time, 2¼ hours. Royalty, \$25. French.
- Mother Mine**, by Gladys Ruth Bridgman. 6 m., 6 w. Sentimental comedy in 3 acts. 1 interior. The play involves Miranda Peasley's motherly care of Jerry, a city outcast. Time, 2 hours. Youmans.
- Mr. Bob**, by Rachel E. Baker. 3 m., 4 w. Comedy in 2 acts. An extremely funny play involving a mistaken identity. Time, 1½ hours. Baker.
- Mr. Pim Passes By**, by A. A. Milne. 3 m., 4 w. Comedy in 3 acts. 1 interior. A delightful comedy of character, full of unexpected turns. Especially recommended to schools and colleges. Time, 2 hours. Royalty, \$50. French.

- Mrs. Briggs of the Poultry Yard**, by E. G. Whiting. 4 m., 7 w. Comedy in 3 acts. 1 easy interior. An extraordinary play for amateurs with a well knit and absorbing plot centering around Mrs. Briggs, whose homely philosophy pervades every scene. Time, 2 hours. Eldridge.
- Mrs. Bumpstead-Leigh**, by Harry James Smith. 6 m., 6 w. A clever society comedy in 3 acts. 1 interior. Particularly well suited to amateurs. Time, 2¼ hours. Royalty, \$25. French.
- Mrs. Gorrings's Necklace**, by H. H. Davies. 5 m., 5 w. Play in 4 acts. 1 interior. An admirable group of well-contrasted and vividly drawn characters, centering around a feminine "idiot" and the theft of her diamond necklace. Time, 2½ hours. Royalty, \$25. Baker.
- Mrs. Mainwaring's Management**, by John Redhead Froome, Jr. 3 m., 4 w. Comedy in two acts. 1 interior. The play involves a wager that by night capable Mrs. Mainwaring will encounter a complication which she cannot manage. Time, 1½ hours. French.
- Mrs. Partridge Presents**, by Mary Kennedy and Ruth Hawthorne. 6 m., 6 w. Comedy in 3 acts. 2 interiors. A business woman tries to give her children the opportunities she herself had missed—and they revolt. Recommended to amateurs. Time, 2½ hours. Royalty on application. French.
- Mrs. Tubbs of Shantytown**, by Walter Ben Hare. 2 m., 4 w., 5 children. Comedy-drama in 3 acts. 1 interior. Mrs. Tubbs is an optimist in spite of poverty and a threatening landlord. Time, 2¼ hours. Eldridge.
- Much Ado About Betty**, by W. B. Hare. 10 m., 12 w., or 7 m., 7 w., by doubling. Comedy in 3 acts. 2 easy interiors. An exceptionally bright, clever, and effective play with good negro, Irish, and eccentric comedy parts. Time, 2 hours. Baker.
- Much Ado About Nothing**, by Leslie Warren. 8 m., 3 w. 2-act play. 1 easy exterior. Designed to bring the most brilliant of the Shakespearean comedies within the reach of amateur players. Time, 1 hour. Baker.
- My Irish Rose**, by Walter Ben Hare. 6 m., 6 w. Comedy-drama in 3 acts. 1 exterior, 1 interior. An appealing story of an Irish aristocrat who marries a little country girl against the advice of his friends. Time, 2½ hours. Denison.
- Nancy Ann**, by Dorothy Heyward. 7 m., 9 w. Comedy in 3 acts. 2 interiors. Nancy Ann felt that she was born for the stage. She becomes the actor-manager's leading lady—for life. Time, 2 hours. Royalty, \$25. French.
- Never Again**, by Anthony E. Wills. 7 m., 5 w. Farce in 3 acts. 1 interior. The parts are all well contrasted and center around the pranks played by two maids on Rufus Fletcher, a crabbed husband and father. Time, 2 hours. Fitzgerald.
- The New Co-Ed**, by Marie Doran. 4 m., 7 w., extras as desired. Comedy in 4 acts. 1 exterior, 1 interior (or simply 1 exterior). Concerns the trials and final triumph of a new student at the college. Strongly recommended to high schools and amateurs. Time, 2 hours. Royalty, \$10. French.
- The New Poor**, by Cosmo Hamilton. 6 m., 6 w. Farce in 3 acts. 1 simple interior. A hilarious farce involving the tangled affairs of students who, in working their way through school, have themselves hired as stranded Russian noblemen. Well suited to amateurs. Royalty, \$25. Longmans, Green.
- Next Door**, by Eleanor Maud Crane. 5 m., 4 w. Modern comedy in 3 acts. 1 exterior, 1 interior. The story of a struggle of two parties to retain possession of a country cottage which had been leased by both from different agents. Time, 2 hours. Fitzgerald.

- No Name**, by Wilkie Collins. 7 m., 5 w. A drama in 5 acts. 4 interiors. Easily produced and very effective. Time, 3 hours. Dramatic.
- Not a Man in the House**, by S. Jennie Smith. 5 w. Comedy in 2 acts. 1 interior. This breezy play is based on the decision of Mrs. Maria Bings not to allow a man to enter her house. Excellent for ladies' clubs. Time, 40 min. Youmans.
- Not Guilty**, by Watts Phillips. 10 m., 6 w. Drama in 4 acts. 6 exteriors, 3 interiors. This is a standard melodrama based on facts which are recorded in one of the most celebrated criminal trials. Time, 2½ hours. Dramatic.
- Nothing but the Truth**, by James Montgomery. 5 m., 6 w. Comedy in 3 acts. 2 interiors. Whole-heartedly recommended as one of the most sprightly, amusing, and popular comedies of which this country can boast. Time, 2½ hours. Royalty, \$25. French.
- No Trespassing**, by Evelyn Gray Whiting. 6 m., 5 w. Comedy in 3 acts. 1 easy interior. A lively "city girl" goes into the country on a vacation to get rid of a certain man, and meets him there. Time, 2 hours. Baker.
- Not So Fast**, by Conrad Westervelt. 4 m., 4 w. Comedy in 3 acts. 2 interiors. The title refers to the slowness and apparent blundering of Henry Watterson Blake, who endeavors to save his two wards from a Wall Street shark. Time, 2 hours. Royalty, \$25. French.
- Oak Farm**, by Anthony E. Wills. 7 m., 4 w. Comedy-drama in 3 acts. 1 interior. A play involving a father who mortgaged the farm to pay his son's way through college and the son's repayment of the sacrifice by exposing the mortgage-holder's villainy. Time, 2½ hours. Fitzgerald.
- Officer 666**, by Augustin MacHugh. 9 m., 3 w., several policemen. Melodramatic farce in 3 acts. 1 interior. A clean, healthy farce about a gentlemanly burglar who is also a student of art. Time, 2½ hours. Royalty, \$25. French.
- The Old Codger**, by Ross Farquhar. 5 m., 3 w. A 3-act comedy-drama. 2 easy interiors. Concerns a lovable old bachelor who looks after the interests of the daughter of an old sweetheart. Time, 2¼ hours. Royalty, \$5. Eldridge.
- An Old-Fashioned Mother**, by Walter Ben Hare. 6 m., 6 w., also a village choir, or a quartet and a group of silent villagers. The dramatic parable of a mother's love in 3 acts. 1 interior. Especially suited for church, Sunday School, lodge or school performance. Time, 2¼ hours. Eldridge.
- The Old Fireside**, by W. A. Stigler. 5 m., 11 w. A rural play in 3 acts. 1 exterior, 1 interior. Time, 1½ hours. Royalty, \$5. Parts are furnished on payment of royalty fee. National Drama.
- Old Lady 31**, by Rachel Crothers. 4 m., 10 w. Comedy in 3 acts and a prologue. 2 exteriors, 1 interior. The story of an aged couple who are unable to keep their little house. Comedy, pathos, stirring drama. Very popular. Time, 2¼ hours. Royalty, \$25. French.
- The Old Peabody Pew**, by Kate Douglas Wiggin. 1 m., 8 w., (or 9 w.). A charming play of New England in 2 acts. 1 scene, the interior of a church. A plaintive love story of a woman's waiting. Time, 1¼ hours. Royalty, \$5. French.
- Only 38**, by A. E. Thomas. 6 m., 6 w. A comedy in 3 acts. 2 interiors. The story tells how a widow finds romance for the first time in the person of Professor Giddings, and how he overcomes the children's aversion to their mother's actions. Time, 2½ hours. Royalty, \$25. French.
- On the Hiring Line**, by Harvey O'Higgins and Harriet Ford. 5 m., 4 w. Comedy in 3 acts. 1 interior. An amusing situation is brought about by Mr. Fessenden's hiring detectives as his domestics, in an effort to solve the servant problem. Time, 2½ hours. Royalty, \$25. French.

- On the Quiet**, by G. R. Bridgham. 12 m. Comedy in 2 acts. 1 interior. A practical joke is played on some Dartmouth freshmen by one of their own number. Time, 1½ hours. Baker.
- An Open Secret**, by M. D. Campbell. 10 w. A farce in 2 acts. 1 interior. When her mother visits her, Madge has to make a showing for the money she spent in furnishing her college quarters. Time, 20 min. Baker.
- Our Boys**, by H. J. Byron. 6 m., 4 w. Comedy in 3 acts. 3 interiors. An old favorite. Time, 2 hours. French.
- Out of Court**, by Oliver P. Parker. 8 m., 8 w. A comedy in 4 acts. 4 interiors. Entirely new and different. Plot provides for an all-star cast. One of the best Parker plays. Time, 2 hours. Royalty, \$5. Parts furnished on payment of royalty fee. National Drama.
- Pals First**, by Lee Wilson Dodd. 8 m., 3 w. Comedy in a prologue and 3 acts. 1 interior, 1 exterior. An ingenious and picturesque mystery play adapted to high schools and colleges. Time, 2½ hours. Royalty, \$25. French.
- Parlor Matches**, by Walter Ben Hare. 4 m., 5 w. An engaging comedy in 2 acts. 1 simple interior. Time, 1½ hours. Denison.
- The Path Across the Hill**, by Lillian Mortimer. 5 m., 5 w. Comedy-drama in 3 acts. 1 interior. A play showing that love is a stronger power than hate. Very popular with amateur groups. Time, 2 hours. Youmans.
- Patsy**, by Fannie Barnett Linsky. 8 w. A comedy for girls in 2 acts. 1 interior. The story sets forth an Irish lassie who gets into various escapades but, very cleverly takes advantage of every opportunity to extricate herself. Youmans.
- The Patsy**, by Barry Connors. 3 m., 3 w. Comedy in 3 acts. 1 interior. The story concerns Patricia Harrington, a girl who "runs second" to her older sister. But her natural spirit—and her father's help—brings her ultimate triumph. Ideal for schools, colleges, churches, and dramatic clubs. Time, 2 hours. Royalty on application. French.
- Patsy from Dakota**, by Evelyn Watson. 1 m., 9 w. A comedy in 3 acts. 2 interiors. Several French characters. May be used for girls' clubs. Patsy, lacking in convention, startles her haughty aunt when she comes to make her a visit. Time, about 1½ hours. Eldridge.
- Patty Makes Things Hum**, by Carolyn D. Gilpatric. 4 m., 6 w. Comedy in 3 acts. May be played by all ladies. 1 exterior, 1 interior. Mr. Greene forgets Mrs. Greene's dinner party, the lobsters don't come, the "accommodator" is sick, and the hostess' sister, Patty, expelled from school, turns up later in the character of a waitress. A riot of fun. Time, 2 hours. Eldridge.
- Peg O' My Heart**, by J. Hartley Manners. 5 m., 4 w. A comedy of youth in 3 acts. 2 interiors. A poor Irish girl is made an heiress and goes to England to be reared by an aristocratic aunt. Time, 2 hours. Royalty, \$25. French.
- Penrod**, by Booth Tarkington. Adapted for the stage by Edward E. Rose. 13 m., 5 w. Play in 4 acts. 1 interior, 2 exteriors. Written in a vein of pure comedy. Primarily for adults, though children may enjoy it. Time, 2½ hours. Royalty, \$25. French.
- A Perplexing Situation**, by S. Jennie Smith. 6 m., 7 w. Comedy in 2 acts. 1 interior. A husband declares that his wife and daughters cannot remain silent for a certain specific time. Time, 1 hour. Penn.
- Petrel, the Storm Child**, by C. S. Bird. 8 m., 5 w. Drama in 3 acts. 2 interiors. A strong, simple story of a waif from the sea, with lots of incidental interest and humorous character. Time, 2 hours. Baker.

- Phyllis's Inheritance; or, A Fight for a Fortune**, by Frank H. Bernard. 6 m., 9 w. A comedy in three acts. 1 interior, 1 exterior. Phyllis, Phillip's wife, receives a fortune on condition that she marries the adopted son of an uncle. Time, 2 hours. Fitzgerald.
- Pink Dominoes**, by A. Delacour and A. Hennequin. 7 m., 5 w. A comedy in 3 acts. 2 interiors. One of the most popular comedies of the present generation. Time, 2½ hours. Dramatic.
- The Pledging of Polly**, by M. C. Lyon and A. Bullock. 12 w. A farce in 2 acts. 1 interior, 1 exterior. A college farce, easy, amusing, and effective. Recommended for school and college performance. Time, 1¼ hours. Baker.
- Pollyanna**, by Catherine C. Cushing. Based on the novel by Eleanor H. Porter. 5 m., 6 w. "The glad play", in 3 acts. 2 interiors. Has humor, tenderness, humanity. Very popular. Time, 2¼ hours. Royalty, \$25. French.
- Polly at Sunshine Cottage**, by Willis Bugbee. 7 m., 7 w. A comedy in 3 acts. 2 easy exteriors. Two girls rent a cottage for the summer. Suspicions of the neighborhood are aroused against them. Very easy, lively, and full of fun. Time, 1¾ hours. Bugbee.
- Polly Wants a Cracker**, by Gladys Ruth Bridgham. 3 m., 4 w. A comedy in 2 acts. 1 interior. A play of confused identity centering about a family. Time, 1½ hours. Baker.
- Polly with a Past**, by George Middleton and Guy Bolton. 7 m., 5 w. A comedy in 3 acts. 2 interiors. The play has to do with the clever efforts of a girl to manufacture for herself a picturesque past in order to make herself more interesting and attractive. Time, 2½ hours. Royalty, \$25. French.
- Pomander Walk**, by Louis N. Parker. 10 m., 8 w. A comedy of happiness in 3 acts. 1 exterior. Costumes, late 18th century. A well-written play, full of clever lines, delightful situations, and charm. Adapted to all-female cast. Time, 2½ hours. Royalty, \$25. French.
- Poor Father**, by John Kendrick Stafford. 6 m., 6 w. A farce in 3 acts. 1 easy interior. The plot is constructed to keep the audience laughing from start to finish. Poor Father thinks he knows how to juggle the truth. An attractive play for amateurs. Time, 2 hours. Denison.
- The Post Office**, by Rabindranath Tagore, from "Short Plays by Representative Authors", edited by A. M. Smith. 8 m., 1 boy, 1 girl, other boys. 2 acts. 1 interior. A simple little play full of imagery. Expresses a deep sense of the divinity of childhood. Royalty on application. Macmillan.
- A Prairie Rose**, by Edith F. A. U. Painton. 7 m., 4 w. A comedy-drama of the Kansas prairies in 4 acts. 1 exterior, 3 interiors. An absorbing love story with good comedy parts. Time, 2½ hours. Denison.
- The Professor**, by Rea Woodman. 5 m., 8 w. A high comedy in 3 acts and an epilogue. 4 interiors. This play follows closely the events of commencement week and will be thoroughly appreciated by the graduates of other days as well as the class that produces it. Time, 2 hours. Eldridge.
- Professor Pepp**, by W. B. Hare. 8 m., 8 w. Farcical comedy in 3 acts. 1 easy exterior. On his vacation to Russia, Professor Pepp is initiated by Boris into a Nihilist Society and is elected to murder the Princess. He flees from Russia in terror. But Boris writes to a friend on the faculty revealing the password. With this weapon everyone terrifies the Professor, who sees a Nihilist in every bush. A side-splitter with many good parts. Recommended for high school or college performance. Time, 2¼ hours. Baker.

- The Professor's Daughter**, by Anne Bunner. 5 m., 4 w. A comedy in 3 acts. 2 interiors. One of the most successful comedies of recent years. Recommended for amateur production. Time, 2 hours. Royalty, \$10. French.
- The Professor's Mummy**, by Harry L. Dixon. From "Portfolio of Dixon Plays." 7 m., 8 w., or 4 m., 6 w. A farce-comedy in 3 acts. 1 interior. The professor's hobby is trying to bring the dead back to life with his Elixir of Life. His son and daughter try to cure him of this mania. Time, 2 hours. Royalty, \$5. National Drama.
- Pro Tem**, by B. L. C. Griffith. 5 m., 4 w. A comedy in 3 acts. 2 interiors. A man of means takes the position of private secretary to the girl's uncle to prove that he is not afraid to work. Time, 2 hours. Penn.
- Quality Street**, by Sir James Barrie. 7 w., 4 m., supernumeraries. 4-act comedy. 3 interiors. Involving the complications in the quaint romance of Phoebe Throssel, a genteel spinster. Time, 2 hours. Royalty on application. French.
- Queen Esther**, founded on the book of Esther. 5 m., 5 w., supernumeraries. Drama in 3 acts. 2 interiors, 1 exterior. Costumes of the time of Esther. Religious play suitable for church societies. Time, 1¼ hours. Flanagan.
- The Rejuvenation of Aunt Mary**, by Anne Warner. 7 m., 6 w. Famous comedy in 3 acts. 3 interiors. The story involves the transformation of a conservative country spinster into a lover of the life of gay New York. Time, 2¼ hours. Royalty, \$25. French.
- The Remarkable Mrs. Dana**, by Beulah King. 5 m., 7 w. A remarkable farce in 3 acts. 1 interior, 1 exterior. Mrs. Dana accomplishes seemingly impossible tasks without faltering—even when most of the family is cast upon a desert island. Good characters. Many good laughs. Time, 2 hours. Eldridge.
- The Restful Hour Inn**, by Erastus Osgood. 6 m., 6 w. Farce-comedy in 3 acts. 1 simple interior. Good Old Prof. Bunn and his nagging wife try to run a tea-room. Wide variety of good characters. Time, 2 hours. Baker.
- The Rivals**, by R. B. Sheridan. 8 m., 4 w. Comedy in 5 acts. Costumes, 18th century. A fine reading and acting edition of a standard play. Time, 2½ hours. French.
- The Road to Yesterday**, by Beulah Marie Dix and Evelyn Greenleaf Sutherland. 8 m., 6 w. Some can be doubled. Comedy of fantasy in 4 acts. 3 interiors. Costumes, modern and Elizabethan. This romantic play, involving a dream which goes back to Shakespeare's time, is ideal for girl's colleges and schools. Time, 2½ hours. Royalty, \$25. French.
- Rollo's Wild Oat**, by Clare Kummer. 7 m., 5 w. Comedy in 3 acts. 4 interiors. Modern and "Hamlet" costumes. The one wild oat in the life of the circum-spect Rollo is a secret ambition to play "Hamlet". He engages a full company in preparation for his performance. Time, 2½ hours. Royalty, \$25. French.
- The Romancers**, by E. Rostand. 5 m., 1 w., supernumeraries. Comedy in 3 acts. 1 exterior. Costumes, 17th and 18th century. Strongly recommended to those seeking a play of high literary quality that is at the same time amusing and wholesome. Time, 2 hours. Baker.
- A Rose o' Plymouth Town**, by Beulah M. Dix and Evelyn G. Sutherland. 4 m., 4 w. Romantic comedy in 4 acts. 1 interior, 1 exterior. Costumes, period of 1622, in New England. A charming play, easy to produce, and highly recommended. Time, 2 hours. Royalty, \$10. Dramatic.
- A Royal Cinch**, by Frank H. Bernard. 2 m., 3 w. Farce-comedy in 3 acts. 1 interior, 1 exterior. A fantastic comedy, simple in plot, but cunningly contrived and cumulative in its development. Time, 1½ hours. Fitzgerald,

- Ruling the Roost**, by Lillian Mortimer. 5 m., 5 w. Comedy-drama in 3 acts. 1 interior. Pa Davis, a kindly "poor relation" who is not poor, heals the breach between his son and the son's wife. A gripping, human drama, rich in comedy and pathos. Time,  $2\frac{1}{4}$  hours. Royalty, \$10. Denison.
- A Runaway Couple**, by W. A. Tremayne. 4 m., 4 w. Farce-comedy in 2 acts. 1 interior. A play involving the mix-up resulting from circumstantial evidence against a married man who is accused of an elopement. Time, 2 hours. Fitzgerald.
- A Rustic Romeo**, by Walter Ben Hare. 10 m., 12 w. Only 5 m. and 4 w. have lines. A musical comedy in 2 acts. 1 exterior, 1 interior. Contains ten exceptionally clever songs, though chorus may be eliminated, if desired. A most interesting plot, wound about the events of a small town, which keeps one's interest alert until Figg locates his \$70 and John Jabe gets a wife. This play is a decided novelty. Time,  $2\frac{1}{4}$  hours. Royalty, \$5. Denison.
- Ruth in a Rush**, by Lindsey Barbee. 5 m., 7 w. A comedy in 3 acts. 2 easy interiors. Ruth in a rush—for a position, for a train, for the borderline. Like Ruth herself, this merry comedy goes with a rush. Time,  $2\frac{1}{2}$  hours. Denison.
- Safety First**, by Sheldon Farmer. 5 m., 5 w. A farce-comedy in 3 acts. 1 interior, 1 exterior. A play based on the moral: "Always tell the truth to your wife." Variety of characters. Especially recommended for lodges, clubs and schools. Time,  $2\frac{1}{4}$  hours. Denison.
- Sally & Co.**, by Kenyon Nicholson. 5 m., 9 w., supernumeraries if desired. A comedy in 3 acts. 2 interiors. Sally Dawson proves to Bates that the best way to cure an undesirable infatuation is to allow a girl to see as much of a lover as she chooses. The scheme works. Time,  $2\frac{1}{2}$  hours. Royalty, \$25. French.
- School**, by T. W. Robertson. 6 m., 9 w. Comedy in 4 acts. An exterior and a school-room. A superior play with three unusually good characters. The male parts may be taken by women, making it easily produced by a girls' school. Time,  $2\frac{1}{2}$  hours. Dramatic.
- The School for Scandal**, by R. B. Sheridan. 12 m., 4 w. A comedy in 5 acts. Scenery, handsome drawing-rooms and library. Costumes of the 18th century. The version of this celebrated play here offered is the one used in the performance of the old Boston Museum Company, and introduces all the interpolations that a century of use in the theater has made a part of the play. Strongly recommended for school use. Time,  $2\frac{1}{2}$  hours. Baker.
- A Scrap of Paper; or, The Adventures of a Love-Letter**, by J. P. Simpson. 6 m., 6 w. A comic drama in 3 acts. 3 interiors. A suitable play for practised amateurs, interesting in story and offering good parts to all. Time, 2 hours. Baker.
- Second Childhood**, by Zellah Covington and Jules Simonson. 6 m., 6 w., (or 5 m., 4 w.). Farce in 3 acts. 1 simple interior. A professor leaves some of his newly discovered Elixir of Youth with an old General and returns to find a baby. Very humorous. Time, 2 hours. Royalty, \$25. Longmans, Green.
- The Second Puncture**, by Carolyn Draper Gilpatric. 6 m., 7 w. Comedy in 3 acts. 2 simple interiors. The "second puncture" compels two girls to spend the night in a strange camp in the mountains. The owner appears and complications ensue. Time, 2 hours. Baker.
- Seven Keys to Baldpate**, by George M. Cohan. 9 m., 4 w. A melodramatic farce in 3 acts. 1 interior. A medley of mystery, farce, and intrigue, which has proved to be one of the outstanding dramatic successes of modern times. Time, 2 hours. Royalty on application. French.

- Seventeen**, by Booth Tarkington. 8 m., 6 w. A comedy of youth in 4 acts. 1 interior, 1 exterior. A play of youth and love and summer time. Recommended for high school production. Time, 2½ hours. Royalty, \$25. French.
- She Stoops to Conquer**, by Oliver Goldsmith. 15 m., 4 w., extras. A comedy in 5 acts. 3 interiors, 1 exterior. Costumes of the 18th century. A well-known, charming piece, brimful of genuine humor. Time, 2 hours. Baker.
- She Would and She Did**, by Mark Reed. 9 m., 6 w. A comedy in 3 acts. 3 simple interiors. Frances Nesmith, suspended from the golf club because she lost her temper and dug holes in the eighth green, flatters, cajoles, and tricks enough members to have her suspension lifted. Delightful comedy. Time, 2¼ hours. Royalty, \$25. French.
- The Show-Off**, by George Kelly. 6 m., 3 w. Comedy in 3 acts. 1 interior. Concerns the struggles of Aubrey Piper to satisfy his enormous egotism and at the same time preserve his self-respect in the face of discouraging obstacles. Brilliant satirical comedy of character. Time, 2 hours. Royalty on application. French.
- The Silent Detective**, by Effie W. Merriman. 6 m., 7 w. A drama in 3 acts. 3 interiors. Full of homely pathos and spontaneous humor. The play as a whole is most excellent and effective. Time, about 3 hours. Dramatic.
- The Sisterhood of Bridget**, by R. E. Ford. 7 m., 6 w. A farce in 3 acts. 3 easy interiors. Mrs. Mason and her daughter exchange places with the servants for one day. An unusual number of comedy parts. Time, 2 hours. Baker.
- Six Sharps, One Flat**, by Helen Gaylord, Luzetta Sanders, and Cora Sanders. 6 m., 9 w. A 4-act drama. 1 easy interior. Concerns six "working girls" who live in a Chicago flat. Time, 2 hours. Royalty, \$5. Dramatic.
- Smilin' Through**, by Allan Langdon Martin. 5 m., 5 w. A romantic comedy in 3 acts. 2 exteriors. Modern and 1870 costumes. A stubborn uncle forbids his niece's marriage to Kenneth Wayne because of his own disappointment in love. For advanced amateurs. Time, 2 hours. Royalty on application. French.
- Snow White and the Seven Dwarfs**. (See: Plays for Children.)
- Son John**, by W. A. Stigler. 6 m., 10 w., or 4 m., 5 w. (by doubling). A comedy in 4 acts. 1 exterior, 3 interiors. A rural play of the higher type, designed especially for production by the average high school. Time, about 2 hours. Royalty, \$5. Parts furnished on payment of royalty fee. National Drama.
- So This Is London**, by Arthur Goodrich. 7 m., 4 w. Comedy in 3 acts. 3 interiors. A kindly and keen observation on English notions of Americans and American notions of the English. Very interesting and amusing. Time, 2 hours. Royalty, \$5. French.
- A Southern Cinderella**, by Walter Ben Hare. 7 w. Comedy-drama in 3 acts. 1 interior. An absorbing story of the pride of a southern aristocrat and the granddaughter's struggle in poverty. The first act can be given separately as a 30-minute playlet. Time, 2 hours. Denison.
- Square Crooks**, by James P. Judge. 6 m., 5 w. Comedy-melodrama in 3 acts. 1 plain interior. Two former crooks, trying to go straight, are hounded by detectives. Good characterization. Time, 2 hours. Royalty, \$25. Longmans, Green.
- Standing By**, by Oliver P. Parker. 5 m., 6 w. A comedy in 4 acts. 3 interior scenes. A war story which emphasizes the debt of gratitude we owe to the soldiers of the World War. Time, about 2 hours. Royalty, \$5. Parts furnished on payment of royalty fee. National Drama.



- Step Out—Jack**, by Harry Osborne. 9 m., 5 w. An optimistic comedy in 3 acts. 3 simple interiors. Jack, with nothing but nerve and his love for Zoe, steps out, gets a start in business, and wins Zoe's respect and love. Time, 2 hours. Royalty, \$10. Baker.
- A Strenuous Life**, by Richard Walton Tully. 9 m., 5 w. Farce in 3 acts. 1 interior. An uproarious farce of college life, famous among amateurs. Easy to act and to produce. Time,  $2\frac{1}{4}$  hours. Royalty, \$15. French.
- Such a Little Queen**, by Channing Pollock. 12 m., 5 w. A comedy in 4 acts. 1 exterior, 3 interiors. One of the brightest, quaintest, and most charming comedies. Time,  $2\frac{1}{4}$  hours. Royalty, \$25. French.
- Sue**, by Ross Farquhar. 4 m., 4 w. A new comedy-drama in 3 acts. 1 easy interior. Sue prevents a robbery, wins the affection of old Uncle Walter and Aunt Molly, and by her ingenuity solves a mystery of three years. Opportunities for character portrayal. Time,  $2\frac{1}{4}$  hours. Royalty, \$5. Eldridge.
- The Suicide Specialist**, by Carl Webster Pierce. 5 m., 6 w. An unusual play in 3 acts. 2 easy interiors. A struggling young physician advertises as "The Suicide Specialist." Patients flock to him. The climax of this amusing farce offers one of the funniest situations in amateur plays. Time, 2 hours. Royalty, \$10. Baker.
- Sunshine**, by Walter Ben Hare. 4 m., 7 w. Comedy in 3 acts. 1 simple exterior. The story leads the audience from farce to real drama with just a flavor of the melodramatic which modern audiences find so pleasing. Time, 2 hours. Royalty, \$10. Baker.
- Sun-Up**, by Lula Vollmer. 7 m., 2 w. A drama of Carolina mountain-folk in 3 acts. Though finely local in the setting, its dialect, and its incidents, this play is universal in its appeal. Splendid characterization, excellent plot. Time, 2 hours. Royalty, \$50. Longmans, Green.
- Sweethearts**, by W. S. Gilbert. 2 m., 2 w. A comedy in 2 acts. 1 garden scene. A simple story, yet an exquisite work of art, which explains its invariable success. Time, about 1 hour. French.
- Taken by Storm**, by Helen Gaylord, Luzetta Sanders, and Cora Sanders. 6 m., 7 w. A drama in 3 acts. 1 easy interior. Several intertwined love stories. Time, 2 hours. Royalty, \$5. Dramatic.
- Teddy; or, The Runaways**, by Walter Ben Hare. 4 m., 4 w. A comedy in 3 acts. 1 interior. Concerns an eloping couple. Full of action; characters good. Time,  $2\frac{1}{4}$  hours. Baker.
- That Girl Anne**, by Willis N. Bugbee. 8 m., 7 w. Rural comedy-drama in 4 acts. 1 interior, 1 exterior, easy to arrange. Anne is suspected of helping her supposed father rob the bank. A wholesome comedy with a surprising climax. Time, 2 hours. Bugbee.
- That Parlor Maid**, by Helen C. Clifford. 5 m., 6 w. Comedy in 3 acts. 1 interior. Anna, who thinks a parlor maid's duty is in the parlor amusing the guests, wins the favor of all. Every part good. Time,  $1\frac{1}{2}$  hours. Fitzgerald.
- That's One on Bill**, by Lillian Mortimer. 5 m., 5 w. Youthful comedy in 3 acts. 1 very simple exterior (or 1 interior if necessary). Based on the unwillingness of certain young people to fall in love as desired by their elders. Lively action and humor. Time, 2 hours. Denison.
- Thirteen Plus**, by Gladys R. Bridgham. 6 m., 7 w. Comedy in 3 acts. 1 interior. A popular writer of fiction writes a story about the guests at his friend's camp in the mountains. A clever mystery play, ideal for amateurs. Time, about 2 hours. Baker.

- Those Dreadful Twins**, by W. C. Parker. 6 m., 4 w. A farce-comedy in 3 acts. 1 interior, 1 exterior. The two Mrs. Browns each seek a recreant husband and the elder by mistake brings her "dear twins" to Deacon Brown's. A ludicrous mix-up follows. Time, 2 hours. Denison.
- The Thread of Destiny**, by Lindsey Barbee. 9 m., 16 w. Comedy-drama of the Civil War, in 3 acts. 1 interior, 2 exteriors. Costumes of the period. A story of the division, by the war, of friends and families in Virginia. Time, 2½ hours. Denison.
- The Three Graces**, by Kenyon Nicholson and Dena Reed. 6 m., 6 w., supernumeraries. Farce-comedy in 3 acts. 1 interior. Story of college life centering around a tearoom called "The Three Graces" and telling how its managers came to be called the "Three Disgraces." Time, 2 hours. Royalty, \$15. French.
- Three Live Ghosts**, by Frederick S. Isham and Max Marcin. 6 m., 4 w., (2 policemen). Comedy in 3 acts. 1 interior. Three soldiers, officially recorded as dead, return to England from a German prison camp. A lively comedy, strongly recommended for amateurs. Time, 2½ hours. Royalty, \$25. French.
- Three Pegs**, by Alice W. Chaplin. 9 w. A comedy in 3 acts. 1 simple interior. A rich woman makes an arrangement to adopt a girl and a confusion of names naturally leads to a veritable "comedy of errors." Time, 2 hours. Baker.
- The Tightwad**, by Robert Keith. 4 m., 4 w. Comedy in 3 acts. 1 simple interior. Tommy's fiancée postpones their wedding for a year in order to train him in economy. He gets enthusiastic and becomes a tightwad. Time, 2 hours. Royalty, \$25. Longmans, Green.
- The Time of His Life**, by C. L. Dalrymple. 6 m., 3 w. A comedy in 3 acts. 2 interiors. Fastidious guests arrive suddenly and Mrs. Grey persuades brother Tom to impersonate the absent colored butler. Time, 2½ hours. Baker.
- A Tip by Radio**, by Carl Webster Pierce. 4 m., 5 w. 3-act play. 1 simple interior. An exciting, clean, old-fashioned melodrama in which the good are rewarded and the wicked punished. Time, 2 hours. Baker.
- Tommy's Wife**, by M. J. Warren. 3 m., 5 w. Farce in 3 acts. 2 interiors. Artist Tommy must have a wife before he can get the contract to do the portrait of an impressionable young heiress. Time, 1½ hours. Baker.
- Tompkins' Hired Man**, by Effie W. Merriman. 4 m., 4 w. Drama in 3 acts. 1 interior. Costumes, modern and rustic. A strong play of the "Old Homestead" type. Time, 2 hours. Royalty, \$5. Dramatic.
- The Torch Bearers**, by George Kelly. 6 m., 6 w. Comedy in 3 acts. 2 interiors. Extraordinarily clever satire on "Dramatics". Very good for amateurs. Time, 2 hours. Royalty on application. French.
- The Truth About Blaysds**, by A. A. Milne. 4 m., 4 w. Comedy in 3 acts. 1 interior. Sparkling dialogue and deft and vital sketches of character. An exceptionally entertaining and successful play. Time, 2 hours. Royalty, \$50. French.
- Tweedles**, by Booth Tarkington and Harry Leon Wilson. 5 m., 4 w. Comedy in 3 acts. 1 interior. This play involves the objections to a proposed match between the scion of the blue-blooded Castleburys and the daughter of a Maine family. Time, 2½ hours. Royalty, \$25. French.
- Two Blocks Away**, by Aaron Hoffman. 7 m., 5 w. 3-act play. 3 interiors. An amusing and touching drama, showing the dramatic effect of wealth on a group of East Side characters. For advanced groups. Time, 2¼ hours. Royalty, \$25. French.

- Two Girls and a Fellow**, by Beulah King. 4 m., 6 w. (may be played with less) Comedy in 3 acts. 1 easy interior. Relatives entertain a visiting royal family in John Leslie's bachelor home during his absence. Time, 2 hours. Baker.
- Unacquainted with Work; or, Married in Thirty Days**, by O. E. Young. 6 m., 6 w. Comedy in 5 acts. 1 interior. A play involving the entanglements of a man forced to choose between marriage in 30 days or jail. Time, 2 hours. Fitzgerald.
- An Unconditional Surrender**, by William Smith Morris. 4 m., 4 w. Comedy in 3 acts. 2 exteriors. A story involving the tangled romance of a Baltimore belle and a popular novelist. Time,  $2\frac{1}{2}$  hours. Penn.
- Under Blue Skies**, by Katharine Kavanaugh. 7 m., 10 w. Comedy-drama in 4 acts. 2 interiors, 2 exteriors. A sweet, innocent country girl, in love with a wealthy young city man, becomes the center of small town gossip. Time, 2 hours. Denison.
- Under the Laurels**, by T. S. Denison. 6 m., 4 w. 5-act play. 2 interiors, 1 exterior. A play with good characters and one easily handled by amateurs, centering around the mountains of the central south. Time, 2 hours. Denison.
- The Voice of Authority**, by B. C. Porter. 7 w. Farce in 3 acts. 1 plain interior. A play full of life and laughs concerning the complications arising from a scarlet fever quarantine. Time, 2 hours. Baker.
- The Way of a Maid; or, Dear "You"**, by Fannie Barnett Linsky. 8 m., 6 w., supernumeraries. A rollicking comedy in 3 acts. 2 easy interiors. Some clever situations with opportunity for individual talent. Time, 2 hours. Baker.
- Welcome Home, Jimmy**, by Eugene Hafer. 4 m., 5 w. 1 interior. A play of the "Way Down East" type, a wholesome drama of the farm with comedy and pathos. Especially good for amateurs. Time, 2 hours. Royalty, \$10. Eldridge.
- What Every Woman Knows**, by J. M. Barrie, from, "Representative Plays 8 m., 4 w. 4 acts. 4 interiors. There are few better plays than this. Not available for amateur production, until after Miss Helen Hays has finished with her fine revival. Time, 2 hours. Royalty, when available, \$50. Scribner's.
- When a Feller Needs a Friend**, by J. C. McMullen. 5 m., 5 w. Farce in 3 acts. 1 easy interior. A play involving the financial difficulties of two boys trying to break into New York. Time, 2 hours. Royalty, \$10. Baker.
- When a Man's Single**, by Eleanor Maud Crane. 4 m., 4 w. A rural society comedy in 3 acts. 2 interiors, 1 exterior. Mrs. Briscoe, a rich New Yorker, with her two sons and daughter, visits Jim Horton's farm. Time, 2 hours. Fitzgerald.
- When Jane Takes a Hand**, by Katharine Kavanaugh. 6 m., 7 w. Comedy in 4 acts. 2 interiors. Charming, romantic, humorous. Time, about  $2\frac{1}{2}$  hours. Royalty, \$10. Dramatic.
- When Smith Stepped Out**, by Harry Osborne. 4 m., 4 w. Comedy in 3 acts. 1 interior. Uncle Bill Smith, from Australia, starts something when he steps out for his evening walk with a revolver in his pocket. Easily within range of amateurs. Time, 2 hours. Royalty, \$10. Denison.
- When the Clock Strikes Twelve**, by Lindsey Barbee. 8 m., 20 w. Comedy-drama in 3 acts. 2 interiors, 1 exterior. When the clock struck twelve, Cinderella lost her prince, but Elizabeth found hers. The plot involves an unexpected will, the malicious interference of a third person, and the bewildering entanglement of an all-of-a-sudden engagement. Time,  $2\frac{1}{2}$  hours. Denison.
- When Their Missionary Came**, by Sara Gosselink. 2 m., 9 w. Sketch in 3 acts, full of humorous situations. The Girls' Church Club is supporting a mis-

sionary, Dr. Smith, whom they are expecting home for a visit. Time, about 45 min. Eldridge.

**Where There's a Will-i-el**, by Adam Applebud. 7 m., 7 w. A snappy comedy of tomfoolery in 3 acts. 2 interiors, 1 exterior, easy to arrange. Serious-minded Willie announces on the evening of his high school graduation that his profession is going to be merely becoming famous. Specialties may be introduced. Time, 2¼ hours. Royalty, \$10. Baker.

**The Whiteheaded Boy**, by Lennox Robinson. 5 m., 7 w. Comedy in 3 acts. 1 interior. Costumes, modern Irish. A fascinating comedy of character, especially recommended to schools, colleges, and little theaters. Time, 2½ hours. Royalty, \$50. French.

**The Whole Town's Talking**, by John Emerson and Anita Loos. 5 m., 7 w. Farce in 3 acts. 1 simple interior. Mr. Simmons invents a love affair for a bachelor—the kind no woman likes—in order to induce his daughter to fall in love with him. Easily produced. Highly recommended. Time, 2¼ hours. Royalty, \$25. Longmans, Green.

**Why Not, Jerry?**, by Ross Farquhar. 6 m., 5 w. A 3-act comedy-drama. 1 easy interior. A young man is forbidden to see his sweetheart until he has proved his business ability. Time, 2 hours. Eldridge.

**The Widow**, by Mrs. Harriet Hubbard Ayer. 7 m., 6 w. Comedy in 3 acts. 1 elaborate interior. The atmosphere is of polite society, with several fine comedy characters. Time, 2 hours. Dramatic.

**The Winning Widow**, by Edith F. A. U. Painton. 2 m., 4 w. Comedy in 2 acts. 1 easy interior. A charming widow, who pretends to be a man-hater, becomes involved with the suitor of one of her daughters. Recommended for high schools, social occasions, etc. Time, 1½ hours. Denison.

**The Wise Young Generation**, by M. C. Radke. 4 m., 6 w. A 3-act comedy. 1 interior. The story of an art student, some girls and their chaperon, a hardware man, a man who mends the wires, and his wife. Romance and humor. Time, 1½ hours. Eldridge.

**The Woman's Hour**, by Frederick Paulding. 5 m., 4 w. Comedy in 3 acts. 1 interior, 1 exterior. Involves a woman-hater, a western millionaire, and two scheming women. A brilliant and very actable play. Time, 2¼ hours. Royalty, \$25. French.

**The Women of the Bible**, by Walter Ben Hare. 21 w., children. A dramatic entertainment in 3 parts. No scenery required; costumes, simple. A reverent picture of the heroines of the Holy Scriptures. Depicts influence of women on men and manners, the progress of woman's independence, and the value of a well-directed reading of the ancient scriptures. Recommended for schools, churches, lodges, and expression classes. Time, 1 hour. Baker.

**The Wren**, by Oliver P. Parker. 6 m., 9 w., or may be doubled. Drama in 4 acts. 3 similar interiors. Especially recommended to high schools. Time, 2 hours. Royalty, \$5. Parts furnished on payment of royalty. National Drama.

**Yimmie Yonson's Yob**, by Lillian Mortimer. 5 m., 5 w. Comedy-drama in 3 acts. 1 interior. Shortly after Mr. Kent accused his son of stealing, the boy disappeared. Yimmie is employed to help with the farming. Compels interest. All parts good. Time, 2 hours. Denison.

**You and I**, by Philip Barry. 4 m., 3 w. Comedy in 3 acts. 2 interiors. Maitland White is not content, because his ambition is to be a painter. He sets his heart on making his boy a great architect. Complications and disasters follow

before everything turns out happily. Especially good for high schools, colleges, and little theaters. Time, 2½ hours. Royalty, \$50. French.

**The Youngest**, by Philip Barry. 4 m., 5 w. Comedy in 3 acts. 1 interior. An ingenious variation of the Cinderella theme. A very human and appealing comedy of contemporary American life, particularly recommended to high schools. Time, 2¼ hours. Royalty, \$50. French.

### PLAYS FOR CHILDREN

**Adventures of Pinocchio**, by Emily Gray. A dramatic story in 13 scenes. Considered a children's classic. Any number of characters. Flanagan.

**At the Fireside**, by Elizabeth Polding. 3 boys, 2 girls. Altogether a lovely picture of family life. Dramatic.

**Beauty and the Beast**, by Caroline Wasson Thomason. Any number of characters. A play for children in 6 scenes. Arranged to be given in English or French. Werner.

**Billy Ben's Pirate Play**, by Rea Woodman. 3 boys, 4 girls, 1 woman. Scenery, simple interior. A dress rehearsal for children. Billy Ben, being sick to the soul of "love plays," writes a pirate play in 3 thrilling acts. Time, 50 min. Eldridge.

**The Boy Scouts**, by Walter Ben Hare. A play in 3 acts. 20 boys. Costumes, Scout and modern. Time, 2 hours. Eldridge.

**The Courting of Mother Goose**, by Miss H. D. Castle. 21 children. A favorite Mother Goose entertainment written in easy verse. Penn.

**A Cure for Discontent**, by Mary Norton. 12 boys, 2 girls. Girls' parts may be taken by boys, or vice versa. A farce for school children. Flanagan.

**A Dream Lesson**, by Josepha Marie Murray. 16 girls. A fairy play for primary or intermediate grades, in which a poor little girl and a rich little girl exchange places. Time, 30 minutes. Eldridge.

**Dream Needles**, by Frances Cavanah. 3 boys, 2 girls. A fairy play for little children. Taken from Child Life.

**The Fairie's Child**, by Gertrude Knevels. 10 children. Little Trudie secures the release of her long-lost brother from the fairies. Time, 50 min. Penn.

**The Fairy of the Fountain**, by George M. Baker. 2 boys, 5 girls; hunters. A musical play in 2 acts. Baker.

**Friends in Bookland**, by Winifred Ayres Hope. Provides for any number of children. Play serves to interest groups in the importance of good books for children. Especially suited for production in Children's Book Week. Macmillan.

**The Frolic of the Holidays**, by Howard W. Tilton. A holiday entertainment for school use. Time, 50 min. French.

**Grown-Up Folks**, by H. C. Eldridge. 5 boys, 5 girls. A delightful play for little folks. At a tea party, the usual longings of the children for the pleasures of being "grown-ups" are gratified by a fairy who changes each one into the character he desires. Time, about 40 min. Eldridge.

**Helga and the White Peacock**, by Cornelia Meigs. 8 children. A fairy play in 3 acts. Time, 1½ hours. Macmillan.

**Idowanna**, by D. Waldo. 7 children. One act. Scene, nursery. The little girl learns that "I don't want to" is a double-edged sword and that "I will" is the best servant after all. Time, about 20 min. Baker.

**Joe**, by Charles Barnard. A comedy of child life in 2 acts. 3 boys, 8 girls. One interior, one exterior. Time, 45 min. Dramatic.

- Just Plain Dot**, by Edith Putman Painton. 5 boys, 9 girls. Simple scenery, easy costumes. For intermediate grades. Time, one hour. Eldridge.
- Little Miss Van Winkle**, by B. Burbank. Comedy in 2 acts. 3 boys, 4 girls. Scenery unimportant. A very original and humorous entertainment. Time, 30 min. Baker.
- The Magic Bell**, by William Pailler. 9 boys, 8 girls, supernumeraries. A fairy play. Costumes, medieval; scenery, an exterior. Dramatic.
- The Master's Birthday**, by Rea Woodman. A play for children in 3 acts, with an epilogue in pantomime. 5 boys, 5 girls. The motive of this play is found in the eleventh chapter of "The Personal History of David Copperfield." Eldridge.
- A Mother Goose Comedy**, by Effie W. Merriman. 2 boys, 2 girls. Costumes represent Mrs. Jack Spratt, Jack Spratt, Miss Muffet, and King Cole. The plot hinges on the death of Mother Hubbard's dog and Jack's arrest for the murder. Time, about 20 min. Dramatic.
- Pandora's Box**, by Seymour S. Tibbals. One act. 4 boys, 4 girls. A dramatization of one of Hawthorne's beautiful wonder tales, arranged for school entertainments. Splendid play for little folks from 10 to 14 years of age. Eldridge.
- Patty Saves the Day**, by Lindsey Barbee. 4 boys, 7 girls. Comedy in 2 acts for the eighth grade. Time, 1½ hours. Scene, interior. Deals with a bit of school rivalry. Denison.
- Peggy's Presence of Mind**, by Seymour S. Tibbals. 3 boys, 3 girls. No special scenery required; little costuming. May be played on any school stage or platform. Time, 20 min. Eldridge.
- Rescued by Radio**, by Lindsey Barbee. 8th grade play in 2 acts. 5 boys, 7 girls. Time, 1½ hours. One scene. Full of wholesome excitement and fun. Eldridge.
- The Search for Mother Goose**, by E. F. Guptill. 8 boys, 9 girls. May be used Christmas or any time. Plays about 30 min. Eldridge.
- The Silver Sandals**, by Blanche Thompson. 6 boys, 5 girls, fairies, peasants, attendants, etc. A charming new play. The princess is downhearted and refuses to be consoled. The fiddler plays, the peasants do folk dances, fairies drill, but not until she gets the silver sandals is she contented. Plays one hour or more. Eldridge.
- Snow-White and the Seven Dwarfs**, by Jessie Braham White. 13 boys, 11 girls. Fairy play in 7 scenes. A good entertainment for children and grown-ups. Time, 2¼ hours. Royalty, \$25. French.
- The Steadfast Princess**, by Cornelia Meigs. 9 boys, 5 girls, with fairies, courtiers, soldiers, etc. A delightful fairy story. Awarded Drama League prize for the best play for children submitted in 1915. Macmillan.
- The Strike Mother Goose Settled**, by Evelyn Hoxie. 5 boys, 7 girls. Depicts cleverness of old Mother Goose in settling rebellion among her children. Time, 15 or 20 min. Eldridge.
- The Tadpole School**, by Stapp-Cameron. 15 children. Woodland setting. A wholesome play with a good lesson for truants. Can be played any time of the school year. Time, 45 min. Baker.
- Three Fairy Gifts**, by Florence Davenport Adams. 2 boys, 6 girls. Scene, a wood. A fairy queen grants a gift to three maidens. The first chooses wealth, the second beauty, the third the power to make others happy. Dramatic.
- The Toy Shop**, by F. S. Isham and Edward Weitzel. 38 children; more or less as desired. A drama with music. Particularly adapted to school or Sunday school entertainments. French.

**A Troublesome Flock**, by E. F. Guptill. 10 boys, 15 girls, or less. A Mother Goose play, with Mother Goose costumes. Scenery, unimportant. Time, 45 min. Baker.

**When the Sun Stayed in Bed**, by Doris Holsworth. One act. 10 children of either sex. The story has plot that will interest both young and old. The Children's Theater of Emerson College counts it one of its successes. Time 30 min. Baker.

### COLLECTIONS FOR CHILDREN

**The Bobbie Bennett Plays for Children**, by Rea Woodman. Six little one-act plays for the younger children. Real child-life stories, exhibiting children's amusing imitations of their elders. No scenery required, and only every-day clothes. Dramatic.

**A Child's Book of Holiday Plays**, by Frances Gillespy Wickes. Nine plays intended primarily for classroom use. May be used as dramatic readings. Macmillan.

**Dramatized Stories, Myths, and Legends**, by Alice Cook Fuller. Consists of delightful dramatization of well-known classics arranged for children of 3rd to 7th or 8th grades. Eldridge.

**Good Plays for School Days**, by Ragna B. Eskil. Several of the plays may be given by either adult or child actors. The purpose is to create atmosphere and naturalness rather than excitement. Youmans.

**Historical Plays for Children**, by Grace E. Bird and Maud Starling. Intended primarily for reading lessons in the classroom. Macmillan.

**La Fayette, Christopher Columbus, The Long Knives in Illinois**, by Alice Johnstone Walker. Highly picturesque plays for young folks. Henry Holt.

**Little Plays for Little Players**, by Harriette Wilbur and others. A collection of plays suitable for use on Thanksgiving Day, Washington's Birthday, Patriots' Day and for general use. Baker.

**New Plays from Old Tales**. Arranged for boys and girls, by Harriet Sabra Wright. Includes Feathertop, Pilgrim's Progress, and others. Macmillan.

**Plays and Comedies for Little Folks**, by Marie Irish. Part I, dramatization of six familiar child stories. Part II, seventeen original plays and comedies, with little songs arranged to familiar tunes. Flanagan.

**Special Plays for Special Days**, by Cecil Richmond. A helpful collection of unusually bright plays for children, covering every special day celebration. Eldridge.

**Ten Boys' Farces**, by E. M. Peixotto. This original collection of plays for boys is largely by boys, having originated in the Columbia Park Boys Club of San Francisco. Baker.

**Three Plays for a Children's Theater**, by Florence Kiper Frank. Have been produced both by groups of children, and of children and grown-ups. Written partly in verse and partly in imaginative prose. Longmans, Green.

**Twelve Plays for Children**, by Elizabeth F. Guptill. These plays are lively and full of action and fun. Plays for children of all grades. Eldridge.

### HEALTH PLAYS

**The Adventure of Everychild**, by Mrs. Henry Backus. 2 act play. 26 children. Time, 1 hour. N. T. A.

**The Brushers' Quarrel**, by Mabel Osborne. 10 children. Time, ½ hour. N. T. A.

**The Carpenter's Union**, by Estelle L. Silverman. 17 children. C. H. O. of America.

**Christening of the Grains**.

**David and the Good Health Elves**, by Maynard Downes. A lesson story for children on fresh air, proper foods, and other health habits. N. T. A.

- The Dinner Pails' Convention**, by Mrs. Edna Clark. About 18 characters. Others may be added. Stresses the value of hot lunches for school children.
- Goodbye, Doctor Quack**. 18 children. Introduces Dr. Keepwell through vegetables and fruits. Webb.
- The Health Crusades Reform Tommy**, by Ragna B. Eskil. (Good Plays for School Days). 4 boys, 3 girls. Time, about 15 min. Youmans.
- Health Plays for School Children**. A collection of plays as developed by teachers and pupils in public schools of greater New York. C. H. O. of America.
- Health Songs and Plays for School Children**. For use in connection with health lessons in grade schools of Missouri. Division of Child Hygiene, State Board of Health of Mo., Jefferson City, Mo.
- The House the Children Built**, by Eleanor G. Griffith. 11 principal characters. Dramatized from the story, "Cho-Cho and the Health Fairy." C.H.O. of America.
- How Dick Outclassed Tom**, by Ora M. Conley. 4 acts. 3 boys, 3 girls, and a number of good fairies. A good health play for older children. Webb.
- The Imps and the Children**, by Mary Rontzahn and Hilda Smith. About 25 children. N. T. A.
- The Jewels of Cornelia**, by James A. Tobey. One scene. 14 children. M. T. A.
- Judith and Ariel**, by Hester D. Jenkins. 16 children, and fairies. A playlet in one scene. N. T. A.
- The Little Vegetable Men**, by Eleanor G. Griffith. 2 acts. 8 main characters and a number of supernumeraries. Dramatized from the story "Cho-Cho and the Health Fairy," introducing the health clown, the health fairy, a witch, and various vegetables. C. H. O. of America.
- The Magic Basket**. 15 children. One scene. N. T. A.
- The Magic Oat Field**, by Eleanor G. Griffith. One act. 12 children. Dramatized from "Cho-Cho and the Health Fairy." C. H. O. of America.
- Miss Fresh Air, Visiting Nurse**, by Cora M. Halland and Hilda W. Smith. One scene. 12 children. N. T. A.
- A Pageant of Average Town**, by Nan Oppenlander. 17 children. N. T. A.
- Pirate Percy and the Slovenly Sloop**, by Homer N. Calver. A playlet for 10 boys. M. T. A.
- Playing Visit**, by Constance P. Wardle. One scene. 3 girls. N. T. A.
- Plays and Pageantry**. A list of health plays recommended by the National Health Council. N. T. A.
- The Quest for the Fountain of Health**, by Mrs. Mildred Dallinger Burnham. 30 children. N. T. A.
- Slim Jim Goes to the Picnic**. 19 children. Webb.
- The Theft of Thistledown**, by George M. P. Baird. A faery interlude. 16 children, and fairies. N. T. A.
- The Vegetables**, by Mignon Quaw. 19 children.  
Play for rural schools. Farmer's Wife, Nov. 1923.
- The Wonderful Window**, by Eleanor G. Griffith. 2 acts. 2 boys, 9 girls. Dramatized from "Cho-Cho and the Health Fairy." C. H. O. of America.

## PUBLISHERS OF HEALTH PLAYS

- C. H. O.—Child Health Organization of America, 370 Seventh Ave., N. Y.  
N. T. A.—National Tuberculosis Assoc., 370 Seventh Ave., N. Y.  
M. T. A.—Missouri Tuberculosis Assoc., 306 Odeon Bldg., St. Louis.  
Webb—Webb Publishing Co., St. Paul, Minn.



## HOME ECONOMICS PLAYS

- The Farmerette**, by E. G. Whiting. 3 acts. Baker. (See: Plays of Two or More Acts, for description.)
- Moth Balls**, by S. Kemper. 1 act. Eldridge. (See: One Act Plays, for description.)
- The Obstinate Family**. 1 act. Baker. (See: One Act Plays for description.)
- Program Suggestions for Home Economics Entertainments**, by Lulu W. Gillum. Journal Printing Co., Kirksville, Mo.
- Wanted: A Cook**, by Edith Painton. 1 act. Youmans. (See: One Act Plays, for description.)

## LATIN PLAYLETS FOR HIGH SCHOOLS

For students in the first year of Latin.

**Fratres.**

**Mala Carmina.**

For students in the second year of Latin.

**Vita Dura.**

**Rex Helvetiorum.**

**Aediles Creantur.**

**Romani Venellos Vincunt.**

**Odiolaria.**

## PLAYS FOR SPECIAL OCCASIONS

## ARBOR DAY

- On the Eve of Arbor Day**, by Cecil Richmond. (Special Plays for Special Days.) Any number of school children. Cast includes fairies and brownies. Eldridge.
- The Spirits of the Trees**, by Ragna B. Eskil. (Good Plays for School Days.) 3 boys, 3 girls. An outdoor masque. Time, about 15 min. Youmans.

## CHRISTMAS

- Aunt Sabriny's Christmas**, by Elizabeth F. Guptill. One-act play. 7 girls. Especially recommended for girls 12 to 16 years of age. Time, about 30 min. Eldridge.
- Betty's and Bobby's Christmas**, by Ragna B. Eskil. (Good Plays for School Days.) 20 boys, 10 girls. Good for Christmas program. Youmans.
- The Birds' Christmas Carol**, by Kate Douglas Wiggin. 3 acts. 3 m., 3 w., 11 children. Scenery easily arranged. Dramatization of the lovely Christmas story. Well suited to presentation by amateurs. Youmans.
- Bo Peep's Christmas Party**, by E. F. Guptill. 6 boys, 8 girls; more or less. One of the best Mother Goose plays. Time, 30 min. Eldridge.
- Christmas and the Flowers**. Excellent Dialogue Series. 10 w. School Publishing Co.
- Christmas at Finnegan's Flat**, by Seymour S. Tibbals. As many characters as children are available. Comedy introducing specialties that will delight the children. Time, 1 hour. Eldridge.
- Christmas at Golden Gulch**, by Seymour S. Tibbals. 2 acts, 8 m., 6 w. speaking parts. Good plot. Affords opportunity for introduction of novelties. Eldridge.
- Christmas at Holly Farm**, by Clara J. Denton. (Thirty Christmas Dialogues and Plays.) For any number of girls and boys. 2 interior scenes. Time, about 30 min. Flanagan.
- Christmas Beyond the Trenches**, by Seymour S. Tibbals. A patriotic Christmas play. Any number can take part. Uncle Sam is pictured as Santa Claus who

brought cheer and happiness to the orphans in Belgium, France, and England. Easily staged and costumed. Time, 1 hour. Youmans.

**The Christmas Burglar**, by Mary H. Flanner. 3 m., 1 w. A melodramatic sketch in 1 act. 1 interior. Time, 20 min. French.

**A Christmas Carol**, dramatized from Dickens by G. M. Baker. 3 acts. 6 m., 3 w. Costumes, in character; scenery, one interior. Introducing tableaux, music, etc. Time, 1 hour. Baker.

**Christmas Doings**, by Lettie C. Van Derveer. A group of Christmas plays, entertainments, and recitations. For children of all ages. Baker.

**A Christmas Eve Adventure**, by Ella Keatinge. 1 act. 5 boys, 4 girls. For children of 9 to 13 years. Dramatic.

**Christmas in the Air**, by Marie Irish. (Thirty Christmas Dialogues and Plays). 6 boys, 5 girls. Scene, a street-car interior. Time, 20 min. Flanagan.

**A Christmas Mix-up**; or, **Mrs. Santa Claus, Militant**, by Bell Elliott Palmer. 6 m., 3 w. A new play for schools and churches. Time, 40 min. Suitable for intermediate grades. Eldridge.

**The Christmas Story**, dramatized by Virginia A. Griswold. 4 scenes. Any number of adults and children. The Bible story of the birth of Christ. Time, 1 hour. French.

**Dolls**, by Louise Van Voorhis Armstrong. Christmas nonsense play in 1 act. 11 characters: a little girl and her dolls who come to life. (2 m., 8 w, and little girl, or all female cast.) Recommended for production by children, but also appealing to adults. Royalty \$10. Longmans, Green.

**A Dream on Christmas Eve**, by Ina Home. Play for 13 children in 1 act. Costumes easily made. Easy to give and can be held in the class room, Sunday-school, or home. Time, 30 min. French.

**Dust of the Road**, by Kenneth Sawyer Goodman. Christmas morality in one act. 3 m., 1 w. On Christmas Eve a tramp prevents a man and woman from stealing money entrusted to them. Royalty \$10. Longmans, Green.

**A Fireside Story**, by Walter Gordon. 2 m., 3 w. Comedietta in 1 act. 1 interior, a parlor decorated with holly or other Christmas greens. An extremely good play. Time, 30 min. Dramatic.

**The Greatest Gift**, by Katharine Lord. 3 scenes. 6 m., 6 w. and others. For children. A play of the Christmas Eve adventures of some poor children in a city, with tableaux of the Nativity. Royalty on application. Longmans, Green.

**The Great Sale**, by Clara J. Denton. (Thirty Dialogues and Plays.) Characters, any number. Time, about one hour. Flanagan.

**Guptill's New Christmas Book**, by Elizabeth F. Guptill. The spiciest original recitations, primary exercises, and splendid dialogues. Also, **Wanted, a Chimney** an exceptionally strong play. March Bros.

**Hiding the Presents**, by Harry C. Eldridge. A Christmas dialog. 3 m., 2 w. Youmans.

**An Impromptu Santa Claus**, by Cecil Richmond (Special Plays for Special Days) About 8 children. Eldridge.

**Little Jack's Christmas**, by E. F. Guptill. A play for intermediate grades. Any number of children. Tommy, the bootblack, finds Jack, a lost child in the street, and he and his friends proceed to give him a Christmas. Time, about 20 min. Eldridge.

**Miss Poinsettia**, by Lillian Schreiner. A charming Christmas play for young folks. 5 m. 19 w. Time, about one hour. Eldridge.

- Mr. Richey Changes His Mind**, by Lee Owen Snook. 1 act and tableaux. 4 m., 4 w. and others. How Christmas changed the attitude of a crabbed wealthy employer. For high school or adults. Time, about 20 min. Eldridge.
- No Christmas in the House**, by Marie Irish. (Thirty Christmas Dialogues and Plays.) One act. 2 m., 3 w. Scene, interior. Time, 20 min. Flanagan.
- Nordic and Tropic**, by Ragna B. Eskil. (Good Plays for School Days.) 1 scene. 8 boys, 2 girls. A play for Christmas week. Time, about 30 min. Youmans.
- A Peep at Santa Claus**, by Seymour S. Tibbals. 3 m. A Christmas dialog. Youmans.
- Poor Papa's Christmas Neckties**, by H. C. Eldridge. 1 m., 2 w., 2 children. Dialog for a Christmas entertainment. Youmans.
- Queen Christmas**, by Carolyn Wells. Any number of children. A delightful Christmas pageant play especially suited to upper grades. Scene, interior. Werner.
- The Quest of Christmas**, by Julia M. Martin. One act. 12 or more children. The story of father, who, because of financial worries, doesn't want to bother with Christmas, but finds money is not the big thing at Christmas time. Time, 25 min. Eldridge.
- The Rose and the Ring**, adapted from Thackeray's Christmas pantomime, by J. B. Greenough. Extravaganza in 4 acts. 16 m., 5 w. Costumes, fantastic. 1 interior, 2 exteriors. An ingenious and effective stage version of this charming classic, ideally suited for school performance. Time, 1¾ hour. Baker.
- Santa Claus Junior**, by H. C. Eldridge. A Christmas dialog. 4 boys, 4 girls. Youmans.
- Santa Claus Junior, Substitute**, by Dora H. Stockman. (Thirty Christmas Dialogues and Plays.) One act. 6 boys, 6 girls. Any number of children may be used as fairies and brownies. Time, 20 min. Flanagan.
- Santa's Predicament**, by Mira Clarke Parsons. Comedy. One act. 4 boys, 5 girls. Eldridge.
- The Star Gleams**, by Florence L. Speare. A community Christmas choral. May be used by high school glee clubs or church choirs. French.
- Thirty Christmas Dialogues and Plays**, by Marie Irish, Clara J. Denton, Laura R. Smith and others. Original and clever Christmas dialogues and plays for children of all ages. Flanagan.
- Three in a Bed; or, Why Santa Stayed in the Chimney**, by H. C. Eldridge. 3 boys. Youmans.
- Trials of Christmas Shopping**, by Marie Irish. (Thirty Christmas Dialogues and Plays.) One act. 1 boy, 3 girls. Time, 20 min. Flanagan.
- The True Christmas Spirit**, by Marie Irish. (Thirty Christmas Dialogues and Plays.) One act. 1 boy, 4 girls. Time, about 20 min. Flanagan.
- Two Christmas Boxes**, by Elsie Duncan Yale. A clever comedy in 4 scenes for 11 women. Suitable for adults. Also adapted for Ladies' Aid and Missionary Societies at any time. Youmans.
- Unexpected Company**, by Clara J. Denton. (Thirty Christmas Dialogues and Plays.) One act. 4 boys, 5 girls. Time, 30 min. Flanagan.
- What Became of the Santa Claus Letters; or, The Editor's Dream**, by H. C. Eldridge. A Christmas dialog and pantomime. 3 boys, 1 girl, and others. Youmans.
- When Santa Claus' Pipe Went Out**, by Annella S. Gilmore. A delightful Christmas monolog that can be used on any Christmas program. Can be given by an adult or older child. Time, about 10 min. Eldridge.
- Why the Chimes Rang**, by Elizabeth McFadden. One act. Adapted from the story of the same name by Raymond MacDonald Alden. This is a dramatization of one of the most deservedly popular stories for children, and adds

to the original narrative the vividness of the dramatic form, and the charm of music, setting, and costumes. Royalty, \$10. Youmans.

**Why We Celebrate Christmas**, by Lula E. I. White. A dialog for four girls. Youmans.

### COMMENCEMENT

**Catching Clara**, by Louise Rand Bascom. 10 boys, 15 girls. 3 acts. Scenery, interior. A play in which a whole graduating class may take part. Time, 2 hours. Youmans.

**The Class Ship**, by Edith Painton. 3 m., 8 w. A playlet for commencement which is a dramatization of Longfellow's "The Building of the Ship." Time, 35 min. Denison.

**Commencement Helps and Hints**. For eighth-grade people. A bright and up-to-date collection of usable material. Contains salutatories, valedictories, prophecies, historic songs, a playlet, etc. Youmans.

**Commencement Week** (Werner's Readings No 54). Baccalaureate Sermons, Hints for Debates, Class Day and Ivy Day, Senior Day, Banquets and Alumni Meetings. Youmans.

**The Dear Boy Graduates**, by Edith Painton. 6 m., 10 w. A farce-comedy in 4 acts. A lively commencement play. Time, 2 hours. Flanagan.

**Graduation Day at Wood Hill School**, by Ward Macauley. 8 boys, 9 girls, and visitors of school. A farcical school entertainment in 2 scenes. A strong play for rural schools. Time, 2 hours. Youmans.

**Mock Commencement**, by H. C. Eldridge. Burlesque. A humorous entertainment for class night or any occasion. The number of characters may be varied to meet the need. Time, 40 min. Eldridge.

**The Sweet Girl Graduates**, by Rea Woodman. A farce in 3 acts and an epilogue. 4 m., 7 w. Eldridge.

**The Value of X**, by Edith Painton. 7 m., 7 w. A comedy in 3 acts and a prologue. Scenes easily arranged. A clever high school play. Time, 1½ hours. Youmans.

**The Vision of the Graduate**, by Edith Painton. 4 acts. 8 m., 7 w. Time, 1½ hours. Flanagan.

### EASTER

**The Boy Who Discovered Easter**, by Elizabeth McFadden. 2 acts. 2 m., 2 w. 1 interior. Based on the story by Raymond MacDonald Alden, "The Boy Who Discovered the Spring". The play gives opportunity for the introduction of any beautiful Easter music. Time, 40 min. Royalty, \$10. French.

### GOOD ENGLISH WEEK

**Animated Parts of Speech**, by Ragna B. Eskil (Good Plays for School Days.) 14 children. For any school program. Time, about 20 min. Youmans.

**The Bank of English**, by Mildred G. Moore. 4 boys, 3 girls. Normal Instructor and Primary Plans, Feb. 1927.

**Good English Comes to Town**, by Laura Hunt. A short sketch for high schools furthering the interests of good English. Plays about 20 min. and introduces 10 or more characters. Mr. Aint, Mr. Double Negative, Mr. You Was, Mr. Slang, Mr. Good English and others. In 2 scenes with easy settings. Baker.

**Sauce for the Goslings**, by Elgine J. Warren. French. (See: One Act Plays for description.)

**Trial for the Murder of the King's English**, by Julia E. Park. A humorous and instructive entertainment which will aid in bringing about the better use of the King's English. 5 m., 2 w., jury, witnesses, etc. Can be used for upper grammar or high school for almost any occasion. Time, about 45 min. Eldridge.

## HALLOWE'EN

- The Fairy and the Witch**, by A. D. Nelson. One act allegorical sketch. 1 adult, and any number of children. Costumes, in character; scenery, exterior. Time, 20 min. Eldridge.
- The Frolic of the Witches**, by Juanita Mae Culp. A drill for 11 little girls. Costumes, in character. Eldridge.
- A Hallowe'en Circus**, by Ragna B. Eskil. (Good Plays for School Special Days.) 10 short acts. Any number of children. Youmans.
- The Haunted Gate**, by Edyth Wormwood. 3 m., 7 w. Time, about 45 min. A clever play in which the ghost furnishes a strong climax. Eldridge.
- Jimmy's Ghosts**, by Cecil Richmond. (Special Plays for Days.) A sketch for children. 5 speaking parts with chorus of witches. Eldridge.
- A Stack of Black Cats**, by Harriette Wilbur. 6 or 8 boys in costume. A unique and eccentric drill. Eldridge.
- What to Do on Hallowe'en**, by Juanita Mae Culp. Contains material for Hallowe'en parties and programs for old and young. Helpful to teachers in building a program. Eldridge.

## MAY DAY

- Crowning the May Queen**, by Elizabeth Guptill. 8 girls, 9 boys; or 17 girls. A spectacular play for children with a clever plot and a happy arrangement. Eldridge.

## MOTHER'S DAY

- Mother**, by Ragna B. Eskil. (Good Plays for School Days.) 2 boys, 3 girls. Scene, interior. Time, 10 min. Eldridge.
- Mother Mine**, by Gladys Ruth Bridgham. Youmans. (See: Plays of Two or More Acts, for description.)
- Observance of Mother's Day**. A short history of its origin. N. Y. T., April 18, 1926. (Package Library.)
- The Treasure Chest**, text by Verna Whinery; music by Grant Colfax Tullar. 1 w., 28 children, and supernumeraries. Especially good for children. No royalty for first performance, but 25 copies must be purchased for the right of presentation. Tullar-Meredith Co.
- What I Owe to My Mother**, by Mary B. Mullett. A clipping from Pictorial Review, May, 1926. (Package Library.)

## PATRIOTIC PLAYS

- The American Flag**, by Cecil Richmond. (Special Plays for Special Days.) Any number of girls or boys. Eldridge.
- The Bravest Boy at Bunker Hill**, by Seymour S. Tibbals. Stirring play of the Revolution. 5 boys, 2 girls, supernumeraries. Strong play for children 12 to 16 years of age. Easy to costume and stage. Time, 45 min. Eldridge.
- The Deeds of Christopher Columbus**, by Cecil Richmond. (Special Plays for Special Days.) A picturesque play for grade school. Provides for any number of children. Time, about 30 min. Eldridge.
- The Flag**, by Ragna B. Eskil. (Good Plays for School Days.) 4 boys, 2 girls. For Flag Day or other patriotic holiday. Time, about 15 min. Youmans.
- George and Martha Washington**, by H. Wilbur. A picturesque and dainty exercise. 4 boys, 4 girls. Appropriate on any patriotic program. Eldridge.
- The Greatness of Washington**, by Cecil Richmond. (Special Plays for Special Days.) 2 boys, 2 girls, and soldiers. Time, about 20 min. Eldridge.

- Hands All Round**, by Irene Jean Crandall. 1 act. 2 m., 4 w. Scene, 1 interior. The story of a World War hero. Time, about 35 min. Denison.
- The Heart of Lincoln**, by Cecil Richmond. (Special Plays for Special Days.) 2 boys, 2 girls. Time, about 20 min. Eldridge.
- The Help-U Washington and Lincoln Collection**. Contains drills, dialogues exercises, recitations, etc. Eldridge.
- In the Wake of Paul Revere**, by Elizabeth F. Guptill. A play for grammar schools. 12 boys, 6 girls. Abounds in thrilling adventure and clever wit. The historical setting furnishes a plot of deep interest which is well sustained throughout. Costumes are those of Revolutionary times in Massachusetts. Time, one hour and 45 min. Eldridge.
- In Washington's School Days**, by Ragna B. Eskil (Good Plays for School Days.) 4 boys, 4 girls. For Washington's birthday. Time, about 15 min. Youmans.
- Like Lincoln**, by Ragna B. Eskil. (Good Plays for School Days.) 1 m., 1 w. Time, about 15 min. A short play depicting the life of Lincoln. Youmans.
- The Little Daughter of the Regiment**, by Joseph Rosetti. 3 boys, 2 girls, and extras. A splendid play for children in 2 acts. Introduces tableaux and singing. Dramatic.
- Our United States**, by Effa E. Preston. A very effective pageant with songs. 24 characters are required and 8 different character groups (as many in each as available.) March Bros.
- Patriotic Plays and Pageants for Young People**, by Constance D'Arcy MacKay. Contains 11 one-act plays which may be produced separately or may be used as links in the chain of episodes to make up an outdoor or indoor pageant. Henry Holt.
- Volume contains: Pageant of Patriots, Hawthorne Pageant, Abraham Lincoln, Benjamin Franklin, The Boston Tea Party, Daniel Boone, George Washington's Fortune, In Witchcraft Days, Merrymount, and Princess Pocahontas.
- They Gave Their Todays for Our Tomorrows**, by Ragna B. Eskil (Good Plays for School Days.) 7 girls. For Armistice Day. Time, about 15 min. Youmans.
- Uncle Sam's Council**, by Eva Thomas Nettleton. A play for children and young people in 1 act. Any number of children can be used. The Goddess of Liberty comes to the rescue of Uncle Sam. French.

#### ST. PATRICK'S DAY

- The Coming of the Light**, by Sister Mary Edwin. 14 m., 4 w. A large number of "extras" can be used. A play of St. Patrick in 3 acts. 1 interior, 2 exteriors. A poetic fantasy revealing the struggle between St. Patrick and the early rulers of pagan Ireland. Especially suited for production by churches, convents, and schools. French.
- The Gifts of St. Patrick**, by J. C. McMullen. 1 act. 2 m., 2 w. Scene, interior. An ideal play for sodalities, driving home as it does a strong lesson. Time, 40 min. French.
- An Irish Festival**, by Esse V. Hathaway. Two episodes. First episode—time, 30 min. Cast: leads, 4 boys, 2 girls; minor characters, 8 boys, 8 girls, chorus 25. Interpretation in dance, song, and pantomime of the old Irish legend, "Fergus MacLeda and the Wee Folk." Second episode—The Land of Heart's Desire, by Yeats. Cast: 3 m., 2 w., and a child. (See: One-Act Plays.) Ivan Bloom Hardin.

**Pat and His Countrymen**, by Clara J. Denton. A dialogue for 2 boys (grammar or high school). An abundance of spicy wit. Time, 5 min. Eldridge.

**St. Patrick and the Druids**, by Bertha E. Bush. A dialogue for any number of boys. The dialogue is based upon incidents that have come down to us as a part of the life of St. Patrick. Eldridge.

### ST. VALENTINE'S DAY

**At the Court of the Queen of Hearts**, by Cecil Richmond. (Special Plays for Special Days.) 6 principals and numerous other characters. A clever play in one act. Introduces St. Valentine, Queen of Hearts, Court Jester, shepherdesses. Time, 45 min. Eldridge.

**The Changed Valentines and Other Plays for St. Valentine's Day**, by Elizabeth F. Guptill. Three easy plays, written by an experienced purveyor for this field. Contents: *The Changed Valentines*, 3 m., 4 w.; *Romance of St. Valentine's Day*, 1 m., 2 w.; *The Queen of Hearts*, 11 m., 13 w. Eldridge.

**The Complete Valentine Book**, by Elizabeth Guptill. Contains drills, recitations, action songs, tableaux, shadow pantomimes, and a number of dialogues and plays for all ages. Full direction for entertaining with novel invitations, decorations, ideas for an "old folks' party," suggestions for a Valentine booth, etc. Eldridge.

**Cupid Mixes Things**, by Sara Henderson. 5 m., 6 w., and 5 children. A Valentine comedy. Cupid breaks his bow and is forced to pierce mortals' hearts by hand. He makes many mistakes. With the aid of Venus and the Love Fairy the wrongs are righted. A garden scene. Time, about 30 min. Youmans.

### THANKSGIVING

**Bobby Brewster's Rooster**, by Effie Louise Koogle. Delightful operetta for young folks. 5 boys 5 girls, required; any number may be used. 2 scenes with ordinary furnishings. Time, about 45 min. Youmans.

**The First Thanksgiving**, by Ragna B. Eskil (Good Plays for School Days.) 2 boys, 3 girls. Scene, interior. Time, about 15 min. Youmans.

**The First Thanksgiving Dinner**, by Marjorie Benton Cooke. A play for sixth to twelfth grades. 6 m., 4 w. 2 children. Indians, Colonists, etc. Dramatic.

**The Mysterious Thanksgiving Guest**, by Beatrice V. Brown. 4 m., 3 w. A clean and clever sketch for grammar school, high school, or young people's societies. Time, about 30 min. Eldridge.

**On Salem Road**, by Julia Martin. Good Thanksgiving play for junior high school. 3 m., 2 w. Eldridge.

**Penelope's Thanksgiving**, by Patten Beard. 3 boys, 3 girls. A story of Puritan days. Plays about 20 min. Eldridge.

**A Present Day Thanksgiving**, by Cecil Richmond (Special Plays for Special Days.) 2 boys, 5 girls, with chorus. Time,  $\frac{1}{2}$  hour. Eldridge.

**The Thanksgiving Feast**, by Harriette Wilbur and others (Little Plays for Little Players.) 14 boys, 6 girls. Baker.

**That Thanksgiving Dinner**, by Harriette Wilbur. A new idea concerning a very old subject. 5 girls, 5 boys, not too small. Plenty of action and fun. Eldridge.

**Tommy's Thanksgiving Party**, by Willis N. Bugbee. 6 boys, 4 girls. A splendid play in 2 acts for intermediate grades. Time, about 20 min. Eldridge.

**PAGEANTS, MASQUES, TABLEAUX, DRILLS, OPERETTAS, AND NOVELTY ENTERTAINMENTS**

- The Backwoods School** in '49, by Walter Ben Hare. 1 scene. Any number of characters. A realistic picture of old-time school days. Baker.
- The Daniel Boone Pageant**, by Clifton Lisle. An entertainment for boys in 5 scenes. Time,  $\frac{1}{2}$  hour. Eldridge.
- Dat Watermillun**, by Harriette Wilbur. A drill for 8 small boys. Eldridge.
- Dickerman's Drills and Marches**. Original drills and exercises for the lower grades. With descriptions of costumes. Flanagan.
- Ding and Ling Brothers' Circus**, by Katherine Wallace Davis. An excellent take-off on circus life. Time, 45 min. to 2 hours.
- The Doo-Funny Family**, by Mary Modena Burns. A novelty entertainment for school, club, or church. May be given by adults or boys and girls. 3 m., 9 w. Time, 1 hour. Denison.
- The Eagle and the Star**, by Elaine Goodale Eastman. An American Indian pageant play in 3 acts. 11 m., 7 or more w., or all girls. Scene, woodland. Especially written for open air presentation by camp, club, or school. Many songs and dances. Camp Fire Outfitting Co., 16-18 West 22nd Street, New York.
- The Enchanted Wood**, by Fannie E. Newberry and T. Martin Towne. A juvenile operetta adapted to the use of public schools. Provides for any number of children. Exterior scenes. Time,  $1\frac{3}{4}$  hours. Denison.
- Evangeline Entertainment**, by Mary O'Reilly. In 5 acts and a tableaux with music and illustrations. Flanagan.
- Four Plays for Dancers**, by W. B. Yeats. Designs for masks and costumes by Edmund Dulac. Contains *At the Hawk's Well*, *The Only Jealousy of Emer*, *The Dreaming of the Bones*, and *Calvary*. Music given for *At the Hawk's Well*, and *The Dreaming of the Bones*. Macmillan.
- The Frolic of the Holidays**. (See: *Plays for Children*.)
- Good Toasts and Funny Stories**, by Arthur Leroy Kaser. Includes toasts and stories about patriotism, home, love, man, woman, and wit. Youmans.
- The Jolly Bachelors**, by Willis N. Bugbee. A motion song or recitation for 10 jolly bachelors and their colored servant. Fitzgerald.
- The Land Where the Good Dreams Grow**, by Nellie Burget Miller. A delightful poetic dance fantasy in 2 parts. 3 m., 1 w. 4 solo dancers; 13 chorus dancers. Royalty, \$5. French.
- The Legend of the Juggler**, by Camille C. Watson. Medieval pantomime in 3 tableaux. 5 m., 1 w., 1 interior, 1 exterior. Costumes, medieval. Time,  $1\frac{1}{2}$  hours. Royalty, \$5. French.
- Miss Huldah's Offer**, by Anna D. Cooper. An illustrated, humorous pantomime arranged for public exhibition. Fitzgerald.
- Money-Making Entertainments**. This unique volume contains a great abundance of new and original material, especially prepared for church, club, or school entertainments, by writers of wide experience in this line of work. Eldridge.
- The Normal Dialogue Book**. A collection of dialogues, tableaux, charades, shadow scenes, and pantomimes. Adapted to school exhibitions, and the social evening party. Flanagan.
- The Novelty Minstrel and Variety Show**, by Frances M. Maddock. A delightful school entertainment. Flanagan.
- The Old Maid's Club**, by Marie Butterfield. Comic entertainment in one scene. 2 m., 16 w. Costumes, old-maidish and grotesque. Time, about  $1\frac{1}{2}$  hours. Denison.



- Old Time Humorous Dialogues**, by Elliott McBride. For young people and adults. Flanagan.
- Princess Kiku**, by M. F. Hutchinson. A Japanese romance. 9 girls, and several extras. Specially recommended for girls' schools and church entertainments. Time, 2 hours. Fitzgerald.
- Scenes in a Restaurant**, by J. A. Kelley. 1 act. 15 m., 10 w. 1 interior. Shows the funny things that might happen in a restaurant local to any place. An entertainment with the opportunity for many specialties and local hits. Time, 1 hour. Baker.
- Scenes in the Union Depot**, by L. M. Parsons. 24 m., 18 w., 8 children. 1 interior. Full of humorous points and opportunities for specialties. Plays for an hour up, according to amount of specialties introduced. Baker.
- The School of Detecting**, by Frederick G. Johnson. A vaudeville sketch. 2 m. Time, 15 min. Denison.
- The Second Shepherds' Play, Everyman, and Other Early Plays**, translated and edited by Clarence Griffin Child. Contains *The Quem Quaeritis* from the *Regularis Concordia Monachorum*, *The Brome Abraham and Isaac*, *The Second Shepherds' Play* of the Towneley Cycle, *Everyman*, *The Robin Hood Plays*, and *The Oxfordshire Saint George Play*. Houghton Mifflin.
- Six Rehearsal-less Entertainments**, by Alice W. Chaplin. All of these entertainments have been successfully produced without full rehearsals. Baker. The subject titles are:
1. Around the World in Bed.
  2. Part 1. The Bachelor's Dream.  
Part 2. Kitchen Orchestra, and Semi-Minstrel Show.
  3. School Days.
  4. The Professor's Magic.
  5. Part 1. Father Time's Art Gallery.  
Part 2. All Ashore.
  6. Part 1. Freak Quadrille.  
Part 2. Mock Trial.
- Thompson's Drills and Marches**, by Phoebe Thompson and others. Eleven exercises and one play for school and public entertainments. Flanagan.
- Three Drills**, by L. R. Smith, and E. Winters. Three fine drills for children, ages 6 to 16. Flanagan.
- Uncle Ephraim's Summer Boarders**, by Willis N. Bugbee. 12 m., 16 w. and several choruses. Novelty entertainment in 3 acts. A play involving a great diversity of types and concerning the financial difficulties of Uncle Ephraim. Time, 1¾ hours. Youmans.
- Under the Sugar Plum Tree**, by Harry C. Eldridge and Willis N. Bugbee. A children's operetta. Introduces Orphant Annie, the Raggedy Man, Hunting Lads and Lassies, etc. Eldridge.
- Wide Awake Dialogues**, by T. S. Denison. 28 snappy dialogues. Denison.

### RECITATION SERVICE

The aim of this service is to assist individuals in the selection of suitable orations and recitations both for local entertainment and for state-wide contests in high schools.

Recitations are constantly being added as the need arises. An effort will be made to secure copies of readings requested which are not included in this list.

## RULES GOVERNING THE SERVICE

1. Because of meager funds available for Extension work, a charge is made for the recitation service as follows:

Two recitations or less at one time, 10 cents minimum charge plus postage. Anything above 2 recitations, 25 cents maximum charge plus postage. If check is sent, make payable to University of Missouri.

2. Readings are lent for one week.
3. Not more than ten readings will be sent to one person at a time.
4. Readings may be used or copied without permission unless the reading is marked "permission obtained from the author or publisher".
5. The University Extension Division should be reimbursed for postage used each way.
6. All readings lost must be paid for.
7. As these selections are, for the most part, typewritten, they must be sent as first-class matter.
8. They should be returned flat, not rolled or folded, and securely fastened in the envelope enclosed.

For the sake of convenience the recitations are listed in the following order:

1. Orations
2. Dramatic
3. Romantic
4. Tragic
5. Humorous
6. Children's Readings
7. Collections

## RECITATIONS

## ORATIONS

Abraham Lincoln—Henry Watterson.  
Abraham Lincoln—Woodrow Wilson.  
America's Coming Greatness—Robert G. Ingersoll.  
America for Americans—P. O. Walker.  
America the Hope of the World—Woodrow Wilson.  
American Integrity—Charles Evans Hughes.  
American Motherhood—Theodore Roosevelt.  
American Taxation—William Pitt.  
Americanism—Theodore Roosevelt.  
The American Revolution—Woodrow Wilson.  
The American University and American Citizenship—Woodrow Wilson.  
America's Responsibility for Armenia—J. T. Main.  
Arnold at Stillwater—Thomas Dunn English.  
Blessings of War—P. Hoche.  
Burns—George William Curtis.  
The Call to Arms—H. H. Asquith.  
Eulogy of Robert E. Lee—John Warwick Daniel.  
Eulogy on Wendell Phillips—George William Curtis.  
Europe and America: Washington—Daniel Webster.  
Fear God and Take Your Part—Theodore Roosevelt.  
Flag Day Speech—Woodrow Wilson.

George Washington and Present American Problems—Albert J. Beveridge.  
 Gettysburg Address—Abraham Lincoln.  
 He Knew Lincoln—Ida M. Tarbell.  
 The Hope of Peace—Russell Kirkpatrick.  
 The Hope of the Republic—H. W. Grady.  
 Idols and Ideals—Max Loeb.  
 International Duty and American Ideals—Theodore Roosevelt.  
 Joan of Arc—Archbishop Ireland.  
 The Law—Hon. H. M. Daugherty.  
 The Leadership of Educated Men—George William Curtis.  
 League of Nations—Woodrow Wilson.  
 Liberty or Death—Patrick Henry.  
 Make Way for Liberty—Montgomery (Poem).  
 The Man With the Muck-Rake—Theodore Roosevelt.  
 March of the Flag—Albert J. Beveridge.  
 The Meaning of America's Entrance into the War—Lloyd George.  
 The Meaning of the Declaration of Independence—Woodrow Wilson.  
 The Message of Flanders Field—Robert R. Aurner.  
 Message to Congress—Woodrow Wilson.  
 A Message to Garcia—Elbert Hubbard.  
 The New South—Henry W. Grady.  
 Oration on the Laying of the Cornerstone of the Bunker Hill Monument—Daniel Webster.  
 The Puritan Spirit—Albert J. Beveridge.  
 The Reign of Law—Woodrow Wilson.  
 The Reply to Hayne—Daniel Webster.  
 The Republic Never Retreats—Albert Beveridge.  
 Return America—Gladys Pennington.  
 Salesmanship—Woodrow Wilson.  
 Shakespeare—Robert G. Ingersoll.  
 Speech of Logan, Chief of the Mingoes—Jefferson.  
 The Strenuous Life—Theodore Roosevelt.  
 The Super-National Mind—Earl Pinney.  
 Toussaint L'Ouverture—Wendell Phillips.  
 A Tribute to Our Honored Dead—Henry Ward Beecher.  
 The True Grandeur of Nations—Charles Sumner.  
 Writs of Assistance—James Otis.

#### DRAMATIC READINGS

An American Citizen.  
 American Eagle—Neal (Poem).  
 The American Flag—Joseph Rodman Drake (Poem).  
 The Angelus.  
 The Angel and the Shepherd.  
 Apostrophe to the Ocean—Byron (Poem).  
 April Day—(Poem).  
 An April Day—Longfellow (Poem).  
 April Twenty-fifth, as Usual—Edna Ferber.  
 The Arab and His Horse (Poem).  
 Barbara Frietchie—John Greenleaf Whittier (Poem).  
 Becalmed at Sea—Samuel K. Cowan (Poem).

Behind Time.  
Blessings of Peace—Henry W. Longfellow (Poem).  
The Blossoms on the Trees—Riley.  
The Boy—Annie Hamilton Donnell.  
Bucks—Frank H. Spearman.  
Call of the Sea—Marguerite Wilkinson.  
Child and Mother—Eugene Field (Poem).  
Chip of the Old Block—Tompkins.  
Christmas at Black Rock—Ralph Connor.  
Christmas at Fezziwig's Warehouse—Dickens.  
The Christmas Burglar—James J. Montague (Poem).  
A Christmas Carol—Edward Schauffler.  
A Christmas Guest—Ruth McEnery Stuart.  
A Christmas Invitation—Dickens.  
Christmas Long Ago—Katherine L. Daniher (Poem).  
A Christmas Present for a Lady—Myra Kelly.  
Christmas Treasures—Eugene Field (Poem).  
Crosses—Mabel Hicks (Poem).  
The Daguerreotype—Tom P. Morgan.  
The Dandelions—Helen Gray Cone (Poem).  
Dawn—Montanye Perry.  
The Death of the Flowers—William Cullen Bryant (Poem).  
Decisive Integrity—Wirt.  
A Dirge—Croly (Poem).  
The Drummer-Boy of Kent (Poem).  
The First Born.  
The First Christmas Tree—Eugene Field.  
The Flag—J. C. F. Schiller (Poem).  
Flowers for the Blue and the Gray (Poem).  
Folks—Zona Gale.  
For the Love of a Man—Jack London.  
From a Far Country.  
Gentlemen, the King—Robert Barr.  
The Gift of the Magi—O. Henry.  
The Girl of the Golden West—Belasco.  
Helen Tharme; or, Old Mother Goose.  
The Highwayman—Alfred Noyes (Poem).  
His Grandfathers—Clarence Kellard.  
His Mother's Sermon—Ian Mac Laren.  
The House by the Side of the Road—Sam Walter Foss (Poem).  
How Bateese Came Home—William Henry Drummond (Poem).  
How Dorothy Saved the Coach—Julia Anna Wolcott.  
Humoresque—Fannie Hurst (Jewish Dialect).  
If—Rudyard Kipling (Poem).  
In the Cool of the Evening—Alfred Noyes (Poem).  
It Snows—Mrs. Hale (Poem).  
Jean Valjean and the Good Bishop—Victor Hugo.  
The 'Jinin' Farms—Eugene Field.  
The Keeper of the Light—Van Dyke.  
The King's Joy Bells—Kate A Bradley (Poem).  
Knee Deep in June—Riley (Poem).

The Lady Hildegard. Translated from the German poem (Poem).  
The Land of the Blue Flower—Frances Hodgson Burnett.  
Legend of the Heather—(Poem).  
The Legend of the Lily—A. Wall (Poem).  
Little Nell—Dickens.  
Long Ago—L. Baer (Poem).  
The Loss of the Birkenhead—Francis Hastings Doyle (Poem).  
The Lost Joy—Olive Schreiner.  
The Man With the Hoe—Edwin Markham (Poem).  
Mandalay—Rudyard Kipling (Poem).  
The Mansion—Henry Van Dyke.  
Mary, the Magdalen (Religious Monologue).  
The Mason Family Now on Exhibition—Bess Streeter Aldrich.  
May—Minnie E. Hays (Poem).  
Memorial Day (Poem).  
Merchant of Venice—Shakespeare.  
The Mission of Kitty Malone—Kate M. Cleary.  
Missouri Pre-Eminence—Le Roy Huron (Poem).  
A Monument for the Soldiers—Riley (Poem).  
Mother O'Mine—Rudyard Kipling (Poem).  
Mother's Day—Octavus Roy Cohen.  
Mr. Bush's Kindergarten Christmas—Hayden Carruth.  
My Twentieth Birthday—M. K. (Poem).  
Napoleon's Farewell—Lord Byron (Poem).  
The Necklace—Maupassant.  
New Year's Eve—Robert W. Service.  
The Nightingale—Louis E. Van Norman (Poem).  
The Nightingale and the Rose—Oscar Wilde.  
The Night Run of the Overland—Elmore Elliott Peak.  
No Excellence Without Labor—Wirt.  
An Object of Love—Mary E. Wilkins Freeman.  
Ode for Memorial Day—Paul Lawrence Dunbar (Poem).  
The Old School Clock—John Boyle O'Reilly (Poem).  
On Christmas Day in the Morning—Richmond.  
An Order for a Picture—Alice Cary (Poem).  
The Other Wise Man—Van Dyke.  
Over the Hill from the Poorhouse—Will Carleton (Poem).  
Over the Hill to the Poorhouse—Will Carleton (Poem).  
Paul Revere's Ride—Longfellow (Poem).  
The Pebble and the Acorn—Miss Gould (Poem).  
The Pendulum—O. Henry.  
The Perseverance of Betsey—Berna Reinhardt.  
The Planting of the Apple Tree—Bryant (Poem).  
Portia at the Bar—Shakespeare.  
Pride and the Cost of War—Christian Burke (Poem).  
Prince Henry and Falstaff—Shakespeare.  
The Promise—Donnell.  
Prosecuting Witness—F. C. Springer.  
Recessional—Rudyard Kipling (Poem).  
The Revolt of Mother—Freeman.  
Rhoda Farrand (Poem).

Rock Me to Sleep (Poem).  
Rodney's Ride—Brooks (Poem).  
The Romance of the Resurrection—Marie Corelli.  
St. Patrick—Brisbane.  
Sally Ann's Experience—Eliza B. Hall.  
The Sea Gull—Louis Untermeyer (Poem).  
The Second Trial—Sarah W. Kellog.  
The Selfish Giant—Oscar Wilde.  
The Servant in the House—Charles Rann Kennedy.  
A Service of Love—O. Henry.  
The Set of Turquoise—Thomas Bailey Aldrich.  
The Seventh Christmas—Coningsby Dawson.  
Shadow of the Guillotine—Walter Rothwell.  
Shylock Lends the Ducats—Shakespeare.  
Slave's Complaint—William Cowper (Poem).  
The Soldier of the Rhine—Mrs. Norton (Poem).  
A Solitary—Mary E. Wilkins Freeman.  
The Song of the Locomotive (Poem).  
A Song of Triumph—Angela Morgan (Poem).  
The Soul of the Violin—Margaret M. Merrill.  
The Spell of the Yukon—Robert W. Service (Poem).  
The Stolen Christmas Tree—Ellis Parker Butler.  
The Stranger Within the Gates—Mary Shipman Andrews.  
Sun Dried—Edna Ferber.  
A Tale of Christmas Eve (Poem).  
Tale of the Terrible Fire (Poem).  
The Tantrum—Frances Hodgson Burnett.  
The Thanksgiving of Dickie, Jr.—Houston.  
'Tis Splendid to Live so Grandly—Margaret E. Sangster.  
To a Pine Tree—Lowell.  
To a Waterfowl—Bryant (Poem).  
A Touch in the Heart—Eugene Field.  
Touch Not, Taste Not, Handle Not—Henry Ward Beecher.  
The Toy Shop—Margaret Spaulding Davis.  
The Town Pump—Hawthorne.  
The Two Carpenters—Zona Gala.  
The Turn of the Tide—Rose Kavanaugh (Poem).  
Uncle Ripley's Speculation—Hamlin Garland.  
The Venomous Worm.  
A Village Lear—Mary E. Wilkins Freeman.  
A Village Singer—Mary E. Wilkins Freeman.  
Waiting—John Burroughs (Poem).  
What is Success?—Edgar A. Guest (Poem).  
What Temperance Did for Me (Poem).  
When Santa Claus' Pipe Went Out—Gilmore (A monologue).  
When the Fleet Goes By—Marion Synon.  
Where is Mary Alice Smith?—Riley.  
The Whirligig of Life—O. Henry.  
Why the Chimes Rang—McFadden.  
William Tell and His Son—Martha J. Nott (Poem).  
With Washington on the Delaware—Welty (Poem).

A Worker in Stone—Gilbert Parker.  
 The Wreck of the Solent—Frederick Lyster (Poem).  
 You Got T' Salute—Ellis Parker Butler.

### ROMANTIC READINGS

Angelina—Paul Lawrence Dunbar (Poem).  
 At Confession.  
 Audrey—Mary Johnston.  
 A Ballad of East and West—Kipling.  
 The Bells of Shandon—Rev. Francis Mahony (Poem).  
 Bud Zunt's Mail—Ruth McEnery Stuart.  
 The Doormat's Revolt—Booth Tarkington.  
 A Few Bars in the Key of G.  
 The Gipsy Trail—Kipling (Poem).  
 The Governor's Last Levee—Sara Beaumont Kennedy.  
 Heart of Brier-Rose—Lillian Bell.  
 The Heathen Chinee—Bret Harte (Poem).  
 Humoresque—Van Dyke.  
 In Missouri—Le Roy Huron Kelsey (Poem).  
 Jennie (Poem).  
 Kit Carson's Ride—Joaquin Miller (Poem).  
 The Kitchen Clock—John Vance Cheney (Poem).  
 Lover's Latin.  
 The Master's Violin—Myrtle Reed.  
 Matilda—Goldsmith.  
 Maud Muller—Whittier (Poem).  
 Money Musk—Benjamin F. Taylor (Poem).  
 The Oak Tree and the Ivy—Eugene Field.  
 An Old Sweetheart of Mine—Riley (Poem).  
 Peg O' My Heart—J. Hartley Manners.  
 The Princess of Make Believe—Annie Hamilton Donnell.  
 Princess Porcelain—Clara Morris.  
 The Romance of a Busy Broker—O. Henry.  
 Six Love Letters.  
 Unseen Yet Seen (Poem).  
 The Work That Is Best—Perry (Poem).

### TRAGIC READINGS

Antony and Cleopatra—William H. Lytle (Poem).  
 The Arena Scene—Lew Wallace.  
 Bad Rufe Tolliver—John Fox, Jr.  
 Battle of Waterloo—Byron (Poem).  
 Betsy and I Are Out—Will M. Carleton (Poem).  
 Bill Mason's Bride—Chiquita (Poem).  
 The Brothers (Poem).  
 Byron—Pollock (Poem).  
 A Casualty.  
 The Christmas Substitute.  
 Conflagration of an Amphitheater—Croly.  
 Cordelia—Brother Paul, O. S. F. (Poem).  
 Crucial Test.  
 A Day Too Late—Rock (Poem).

Death of Jean Valjean—Victor Hugo.  
 Demon of the Mirror—Bayard Taylor (Poem).  
 The Dying Soldiers (Poem).  
 The Fate of Zoroaster—F. Marion Crawford.  
 The Festal Board (Poem).  
 Ginevra—Rogers (Poem).  
 He Never Smiled Again—Hemans (Poem).  
 Inja—Amelia Rives.  
 The King's Bell.  
 Laddie.  
 The Lance of Kanana—Arb El Ardavan.  
 Left Alone (Poem).  
 Lochiel's Warning—Campbell (Poem).  
 Lord Ullin's Daughter (Poem).  
 Love More Powerful Than Prison Stain—Lucy Baker Jerome.  
 Madame Butterfly—J. L. Long.  
 The Mallet's Masterpiece—Edward Peple.  
 The Man Who Planted the Hungry Grass.—Ruth Sawyer.  
 A Mazurka of Chopin's—Charles F. Richardson.  
 Mercedes—Thomas Bailey Aldrich.  
 Mona's Waters (Poem).  
 Nello and Patrasche, from A Dog of Flanders—Louisa de la Rame.  
 Number Six.  
 Patsy—Kate Douglas Wiggin.  
 The Return of Enoch Arden—Alfred Tennyson (Poem).  
 Ride to Cherokee—Amelia W. Carpenter (Poem).  
 The River of Stars—Alfred Noyes.  
 Samuel Cowles and His Horse Royal—Eugene Field.  
 Serpent's Vengeance—G. M. Ritchie (Poem).  
 The Shooting of Dan McGrew—Robert W. Service. (Poem).  
 The Skylark's Bargain.  
 The Soldier and the Pard—Bayard Taylor (Poem).  
 Somebody's Boy.  
 Somebody's Darling. (Poem).  
 Something Great—F. Taylor (Poem).  
 Tamed by a Child—Richard Harding Davis.  
 Telemachus—G. M. Sheldon (Poem).  
 When the Lord Passd By.  
 White Azaleas—Helen Ellsworth Wright.

#### HUMOROUS READINGS

An Abandoned Elopement—Joseph C. Lincoln.  
 Advertising for a Wife—Joe Lincoln.  
 Amateur Photography—Nathan H. Dole (Poem).  
 Another William Tell—Lucy Norvell Harrison.  
 Apollo Belvedere—Ruth McEnery Stuart.  
 At the Football Game (Girl's Impersonation).  
 At the Hairdresser's—May Isabel Fiske.  
 Aunt Lizzie and the New Education.  
 Aunt Mandy's Mating—Catherine Rhodes Davis (negro dialect).  
 Aunt Peggy and High Art—Mary Kyle Dallas.  
 Bachelor and Baby—Margaret Cameron.



Baker's Bluejay Yarn, from "A Tramp Abroad"—Mark Twain.  
The Bear Story—Riley (Poem).  
The Bee's Sermon (Poem)  
Billie Brad and the Big Lie—Ellis Parker Butler.  
The Blue Willow-Ware Platter—Montgomery.  
A Boy and His Stomach—Edgar Guest (Poem).  
Buck Fanshaw's Funeral—Mark Twain.  
The Champion Checker Player of Ameriky—Riley.  
The Colonel's Experiment—Will Lisenbee.  
Consternation—Louis E. Van Norman (Poem).  
Courting Under Difficulties.  
A Cutting of "Mary Cary".  
The Day of Judgment—Elizabeth Stuart Phelps.  
Dey Ain't No Ghosts—Ellis Parker Butler.  
The Dishonorable Dolls—Booth Tarkington.  
Eliph Hewlitt, Book Agent—Ellis Parker Butler.  
Emmy Lou—George Madden Martin.  
The End of a Perfect Day.  
The Fall of Georgie Bassett—Booth Tarkington.  
Farmer's Skinner's Visit to Boston.  
A Fearful Fright.  
Finnigan to Flannigan—S. W. Gillilan (Poem)  
The First Church's Christmas Barrel—Caroline Abbott Stanley.  
The First Thanksgiving—Pauline A. Bristow.  
Four Inches—Irene S. Woodcock.  
Freckles—Galspell.  
General Miles—Nellie Hurst.  
Goliath—Aldrich.  
The Good Little Boy—Edgar Guest (Poem).  
The Good Reader.  
The Great Day Matilda Voted—John Kendrick Bangs.  
Green Stockings—Kenneth Rand.  
The Gypsy Trail.  
Hashimura Togo's Christmas Day in the Morning—Irwin (Japanese Dialect)  
The Hazing of Valliant—Jesse Lynch Williams.  
Her First Shot.  
Hiram's Housekeeping.  
How the Camel Got His Hump—Kipling.  
How the Elephant Got His Trunk—Kipling.  
How Tom Sawyer Whitewashed the Fence—Mark Twain.  
How the Whale Got His Throat—Kipling.  
The Imaginary Invalid—Jerome K. Jerome.  
The Imp and the Angel—Josephine Dodge Daskam.  
In the Morning (negro dialect) (Poem.)  
Jane—Booth Tarkington.  
Jimmy Brown and Mr. Martin's Eye—W. L. Alden.  
Jimmy Butler and the Owl.  
Jonah and the Whale (negro dialect).  
Justice—Berton Braley.  
The King of Boyville—William Allen White.

The Kirby Wedding—Hayden Carruth.  
The Lady Across the Aisle—Ellis Parker Butler.  
A Lesson in Weighing—Charles R. Talbot (Poem).  
A Literary Nightmare—Mark Twain.  
A Little Change for Edward—Mary Stewart Cutting.  
The Little God and Dicky—Josephine Dodge Daskam.  
The Little Quaker Sinner (Poem).  
Lost—Riley (Poem).  
Mammy's Pickanin'—Lucy Dean Jenkins (negro dialect) (Poem).  
'Mancipation Ann—E. G. R. Y.  
Matilda (Poem).  
The Memoirs of a Yellow Dog—O. Henry.  
Miss Tooker's Wedding Gift—John Kendrick Bangs.  
The Mission Box that Scandalized the Village—Frances Greenman.  
A Morning Ramble—Paulding.  
Moriah's Mourning—Ruth McEnery Stuart.  
Mother Would Learn to Drive.  
The Mourning Veil.  
Mr. Bush's Kindergarten Christmas—Hayden Carruth.  
Mr. Dooley on the Comforts of Travel—Peter Finley Dunne.  
Mrs. Middlerib's Letter.  
My Editing—Mark Twain.  
Nora Had Her Picture Took (Irish Monologue).  
Nothing to Laugh At—Edgar A. Guest (Poem).  
The Office Boy—Montague Glass.  
Old Jabe's Marital Experience—Thomas Nelson Page.  
The Old Story—Mary Ainge De Vere (Poem).  
The One-Legged Goose—F. Hopkinson Smith (negro dialect).  
On Babies—Jerome K. Jerome.  
The Other Things of Life—Booth Tarkington.  
Part Panther or Something—Booth Tarkington.  
Penrod, the Little Gentleman—Booth Tarkington.  
Penrod's Busy Day—Booth Tarkington.  
Peter Projects—Mariel Brady.  
Polly Ann's Memorial Party—Winifred Arnold.  
Red Rupert of Metuchen—Frank Condon.  
Rescued (Poem).  
The Romance of a Busy Broker—O. Henry.  
The Ruggles' Dinner Party—Kate Douglas Wiggin.  
St. Patrick's Martyrs (Poem).  
Santa Claus.  
Sarah—Davies.  
Scene from "The Little Minister"—J. M. Barrie.  
Sentimental Tommy—J. M. Barrie.  
Setting a Hen.  
The Son's Wish (Poem).  
A Spy in the Neighbor's Camp.  
A Telephone Tragedy.  
The Three Hundred—Ellis Parker Butler.  
The Tiger—Booth Tarkington.  
Tommy—Kipling (Poem).

Tom Sawyer's Love Affair—Mark Twain.  
 A Tree-tise on Nature—Louis H. Levin (Poem).  
 The Two Brothers—Talmud (Poem).  
 The Two Chimneys—Philip Burroughs Strong (Poem).  
 The Usual Way (Poem).  
 The Watermelon Stockings—Alice Caldwell Hegan.  
 The Wedding Fee—R. M. Streeter (poem).  
 What William Henry Did—J. L. Harbour.  
 When Angry, Count a Hundred—E. Cavazza.  
 When Father Carves the Duck—E. V. Wright (Poem).  
 When Malindy Sings—Paul Lawrence Dunbar (Poem).  
 The Wonderful Tar Baby Story—Joel Chandler Harris.

#### CHILDREN'S READINGS

Almost Beyond Endurance—Riley (Poem).  
 Begin Your Reform Today (Poem).  
 The Boy and the Butterfly (Poem).  
 The Boy Lives on Our Farm—Riley (Poem).  
 A Boy's Mother—Riley (Poem).  
 Bud's Fairy Tale—Riley (Poem).  
 A Christmas Story—Bailey.  
 Clatter Pate—Grace Miller White.  
 Dickey's Christmas.  
 Down in the Strawberry Bed—Clinton Dollard (Poem).  
 Dreams for Sale—S. Walter Morris (Poem).  
 Entertaining the Minister—Elsie D. Yale.  
 Ez—Riley.  
 Friends—Dorothy Dix.  
 Frightened—Reed (Poem).  
 Gentleman Gay's Thanksgiving—Marian Douglas (Poem).  
 The Hare and the Tortoise—La Fontaine (Poem).  
 Here Comes the Bride.  
 How Gentlemen are Made—Marjorie Benton Cook.  
 Hymn for a Child on Mother's Day—Ethel Arnold Tilden (Poem).  
 How They Caught the Panther—Rev. Alfred J. Hough.  
 How We Celebrated—Zitella Cocke (Poem).  
 If Santa Claus Was Pa—Earle Hooker Eaton (Poem).  
 I've Got a Pain in My Sawdust—Henry C. Warner and Herman Avery Wade.  
 (Song).  
 Jimmy Brown's Prompt Obedience.  
 Jimmy Brown and Mr. Martin's Eye—W. L. Allen.  
 Johnny's History Lesson—Nixon Waterman (Poem).  
 The Kindergarten Tot—Fred Emerson Brooks (Poem).  
 Lass Dorothy (Poem).  
 Last Night When You Kissed Blanche Thompson—Bess Streeter Aldrich.  
 Little Boy Blue—Eugene Field (Poem).  
 A Little Girl to the River (Poem).  
 Little Knight-Errant—Margaret A. Richard (Poem).  
 A Little Pilgrim (Poem).  
 A Midnight Performance—Helen Wing (Poem).  
 Microbes (Poem).  
 A Mother's Cares (Poem).

Mother's Fool (Poem).  
Naughty Zell—L. B. Griffin.  
The Night Before Christmas—Clement C. Moore (Poem).  
Night in Bethlehem—Julia P. Dabney (Poem).  
Noses—Henry Firth Wood.  
The Oak-Tree—Howett (Poem).  
The Old Oaken Bucket—Samuel Woodworth (Poem).  
The Orphan's Dream of Christmas (Poem).  
Over the Baluster.  
The Owl Who Lost His Hoot—Mildred Merryman (Poem).  
Peggy, the Flapper (Poem).  
A Perfect Day—Mary Dixon Thayer (Poem).  
Poor Santa Claus—Caroline B. Condit (Poem).  
Scairy Little Mary (Poem).  
Since Sister's Got a Beau (Poem).  
Sister's Best Feller—Joseph C. Lincoln (Poem.)  
Spelling-Class—Helen S. Daley (Poem).  
The Tempest. (Poem).  
Thanksgiving Eve—Margaret Sidney (Poem).  
Three Little Kittens (Poem).  
Tracking After Daddy (Poem).  
A Troublesome Caller (Poem).  
Trouble 'Nuf.  
Was Pa Ever a Boy?—Billings (Poem).  
What Echo Said (Poem).  
What Lottie Saw—E. L. Brown.  
What I'm Thankful For (Poem).  
What Is Tomorrow (Poem)?  
What Matters—Myrtle Barber Carpenter (Poem).  
When Grandma Comes to Our House—S. E. Kiser (Poem).  
When Old Jack Died—Riley (Poem).  
When Pa Takes Care of Me—C. Williams (Poem)  
When Washington Was President—Robert J. Burdette (Poem).  
Where Do Fish Go When It Rains (Poem).  
Where Ye Spankweed Grows—Paul West (Poem).  
Woodticks (Poem).

### COLLECTIONS

Arbor Day Material.  
Thanksgiving Material.  
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"Commencement Week" (known also as Werner's Readings and Recitations, No. 54"). Werner.  
"Graduation Day" (Werner's Readings and Recitations, No. 55). Werner.  
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Story and Play Readers—Volumes I, II, and III. (Sixth, Seventh and Eighth Years). Compiled by Anna M. Lutkenhaus and Margaret Knox.  
Werner's Readings and Recitations, No. 26. Werner.  
The Year's Entertainments. A Collection of Recitations, Dialogues, Songs,

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Address all communications to the

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University Extension Division  
1 B. & P. A. Bldg., Columbia, Missouri.

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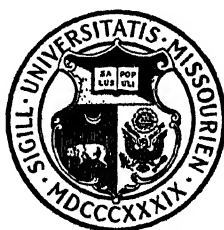
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| American Play Co.   | 33 West 42nd St., New York City                  |
| Ames Publishing Co.   | Clyde, Ohio                                      |
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| Division of Child Hygiene<br>(Missouri State Board of Health) | Jefferson City, Mo.                              |
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EXTENSION SERIES NO. 59

CHARLES H. WILLIAMS, EDITOR

# Visual Education Service

## *Catalog of Slides, Films and Other Visual Aids*





UNIVERSITY OF MISSOURI

UNIVERSITY EXTENSION DIVISION  
VISUAL EDUCATION SERVICE  
COLUMBIA, MISSOURI

ARTICLES OF AGREEMENT FOR BORROWERS OF FILMS

I hereby make application for film service during the year September 1, 1928, to September 1, 1929, and agree to comply with the following regulations when using films furnished me by this service:

- (1) Films to be handled by competent operators, and projected on machines in good repair.
- (2) To make necessary splices accurately and carefully.
- (3) To reimburse the owner of the film for all films destroyed or damaged beyond repair (sprocket holes torn out and sprocket marks on face of film included) at cost per foot of film damaged.
- (4) To return films on the day directed by the Visual Education Service.
- (5) To report the attendance and other required items of information at once, on blanks furnished by the Visual Education Service.
- (6) Not to lend films to other institutions or individuals without the WRITTEN PERMISSION of the Visual Education Service.
- (7) To make no admission charge where these films are shown, except where the benefits accrue to the school or are used wholly for the purchase of visual education material to be used for school purposes. (This clause does not apply to films listed under title "Rental Films").
- (8) To remit \$10.00 with contract as inspection fee from September 1 to September 1, or \$5.00 per half year—September 1 to January 1, or January 1 to September 1. The Visual Education Service reserves the right to limit the number of films sent at one time to 5 reels and the total number sent for the \$10.00 fee to 50 reels per year in case the demand for films makes it necessary to do so in order to supply all the educational institutions. In no case will more than 5 reels be shipped at one time except in case of films that contain more than 5 reels. This fee is to pay in part for the inspection and minor repairs on films. In case this fee is not paid, the Visual Education Service may C. O. D. us for the amount of each shipment, 35c per reel.
- (9) To pay all express or parcel post charges on films.
- (10) To have films insured in shipping.
- (11) Failure to comply with these regulations shall be deemed just cause for discontinuance of service, in which case no part of the inspection fee will be refunded. I have read the rules and regulations governing the service.

SIGNED .....

Teacher

SIGNED .....

Superintendent

Date.....





## UNIVERSITY EXTENSION DIVISION

### VISUAL EDUCATION SERVICE

The Extension Division of the University of Missouri has inaugurated a Visual Aid Service for the schools, churches, farmers' clubs, colleges and other educational institutions.

### RULES AND REGULATIONS

#### LOAN SERVICE

1. At present this service includes lantern slides, films, charts, prints, stereographs, and exhibits. In each case the borrower pays all transportation and insurance charges and agrees to return the material in as good condition as when received. There is no other charge on charts, prints, exhibits, stereographs, U. S. Bureau of Mines films and M. U. films. The film service has been divided into two sections: i. e., the loan service and the rental service. Users of loan films are not permitted to charge any fee when these films are shown even in conjunction with others, except in case the benefits accrue to the school or are used wholly for the purchase of visual education material to be used for school purposes. The institution using the loan service must pay an inspection fee of \$10.00 per year, September 1 to September 1, or \$5.00 per half year, September 1 to January 1, or January 1 to September 1. If individual bookings are desired, the inspection fee will be 35c per reel. This loan service is not available to motion picture theaters or for home entertainment. These films may not be shown as part of a motion picture theater program when a fee is charged for the remainder of the program.

2. For films in our rental service, Series E, a rental fee is charged. This fee goes toward replacement of the film when worn out, and for providing proper care and inspection. Any surplus is used to provide additional visual aids for the library. No restrictions are made on admission charges for this class of service. This service is not open to motion picture theaters.

3. For slides a fee of \$5.00 per year, \$2.50 per half year, or 35c for one shipment will be charged to aid in paying expenses of inspection and packing.

4. In the case of schools outside the state the inspection fee for slides will be 50c per shipment.

5. There will be a charge of 25c per reel per day on all loan films kept over time. The date on the billing slip and the express waybill will be the final authorities. On rental service the rental fee is repeated for each day the film is kept over time without express permission.

6. No one is permitted to lend or transfer any films or other visual aids to any other person without obtaining express WRITTEN PERMISSION from the Visual Education Service, University of Missouri.

7. Special arrangements must be made for shipment by Parcel Post. POSTAGE AND FEES MUST BE PAID IN ADVANCE IN SUCH CASES.

8. All checks or money orders should be made payable to the UNIVERSITY OF MISSOURI.

9. Requests for bookings of films should be received at least one week in advance of the date of showing. It is impossible for the Visual Education Service to render adequate service on short notice. If the borrower will submit a list of possible dates and the catalog number of the film subjects desired, every effort will be made to complete a satisfactory schedule.

10. First, second, and third choices should be indicated when booking films, as the first choice may not be available for the date desired.

11. In ordering, give catalog number and the title.
12. Use of these films for personal gain is strictly prohibited.
13. Attendance reports are required for each showing and should be mailed the same day the visual aids are returned. Cards for this purpose are mailed to patrons on the day the material is shipped.
14. Any failure to ship or handle visual instruction material properly or to report exhibition attendance will be considered sufficient reason for suspending future service.
15. All users of visual aids are expected to return material on the date indicated on the billing slip mailed to the patron at time of shipment from this office. This is necessary because many programs are booked in advance and the failure to comply with this item may completely upset the schedule for this particular material. If not received promptly a collect telegram will be sent to user.
16. When returning material, shipping labels should be pasted over the old labels to avoid the possibility of the parcels' going astray.

### HANDLING OF FILMS

1. **Do not rewind films.** Place the reel band on the proper reel when packing for return shipment.
2. **Never fasten a broken film with a pin.** Always use wire paper clips.
3. Remember that one trip through an improperly adjusted projector may completely ruin a film. The film track and tension spring should be cleaned of all emulsion deposit after each program. Torn sprocket holes may be caused by worn sprocket teeth or by dirt accumulating in the film track, on the tension spring, and around the sprocket teeth. Do not use a dirty projector, a poor screen, or an uninformed operator as it is impossible to obtain good projection under these conditions.
4. Keep films inclosed in container in a cool place.
5. Keep reel bands securely fastened around the proper reel.
6. Do not allow oil or grease to come in contact with the film as it will become streaked. With a soft cloth wipe all surplus oil from machine before showing film.
7. Further instructions on the care of films are given in "Look and Learn", Volume I, No. 2. If you do not have this publication, write direct to us for it.

UNIVERSITY OF MISSOURI  
VISUAL EDUCATION SERVICE  
LOAN SERVICE

Motion Picture Films

In case a film is to be used for classroom teaching, we will be pleased to supply a list of subtitles in advance, on request.

Series A

- A-1. SELECTING A LAYING HEN. How to select the hen that will lay. (U. S. Dept. of Agriculture.) 1 reel. Non-flam.
- A-2. EMBRYOLOGY OF THE CHICK. Actual photographs of egg each day during incubation period. (U. S. Dept. of Agriculture.)  $\frac{1}{2}$  reel. Inflammable.
- A-4. THE HORSE IN MOTION. By means of slow motion and regular motion pictures, the gaits of horses are shown. Should be run more than once for best teaching results. (U. S. Dept. of Agriculture.) 1 reel. Non-flam.
- A-5. DAIRY CATTLE AND THEIR SELECTION. (Society Visual Education.) 1 reel. Non-flam.
- A-6. DAIRY CATTLE—BREEDS, TYPES AND CHARACTERISTICS. (Society Visual Education.) 1 reel. Non-flam.
- A-7. THE HONEY BEE. (Ford) 1 reel. Non-flam.
- A-8. MAPLE SUGAR. (Ford) 1 reel. Non-flam.
- A-9. IRON AND STEEL. (Ford) 1 reel. Inflammable.
- A-10. ROCKY MOUNTAINS. Scenes in mountains, Royal Gorge, Yellowstone and other national parks; animals of the region, and occupations of people. (Ford) 1 reel. Non-flam.
- A-11. PANAMA CANAL. Map of Canal Zone showing location of towns and locks. Shows how a ship is taken through the locks. Scenes in cities, towns, and villages. (Ford) 1 reel. Non-flam.
- A-12. NIAGARA FALLS. (Ford) 1 reel. Non-flam.
- A-13. WASHINGTON, D. C. Map of Washington locating chief points of interest. Views of Washington's Monument, Capitol, White House etc. (Ford) 1 reel. Non-flam.
- A-14. EXIT ASCARIS. Micro and ordinary photographs tell the story of what causes round worms in swine and how controlled. (U. S. Department of Agriculture.) 2 reels. Non-flam.
- A-15. EGYPT IN THE TIME OF MOSES. (Wisconsin University.) 1 reel. Non-Flam.
- A-16. THE CECROPIA MOTH. Shows the life history of the moth. (Edison)  $\frac{1}{2}$  reel. Inflammable.
- A-17. KING BASKETBALL. Shows coach instructing team in the various plays. By means of slow and regular motion each position and play is shown in detail. (Indiana University) 1 reel. Non-Flam.
- A-19. TOMMY TUCKER'S TOOTH. A story of two boys—one brushed his teeth, the other did not. (Deaner Institute) 1 reel. Non-flam.
- A-20. DAIRY MANAGEMENT. (Society Visual Education.) 2 reels. Non-flam.

- A-21. CRICKET ON THE HEARTH. 2 reels. Inflammable.
- A-22. ENOCH ARDEN. 2 reels. Inflammable.
- A-23. BENJAMIN FRANKLIN. 1 reel. Inflammable.
- A-24. ALEXANDER HAMILTON. 1 reel. Inflammable.
- A-25. THOMAS JEFFERSON. 1 reel. Inflammable.
- A-26. DANIEL WEBSTER. 1 reel. Inflammable.
- A-27. WILLIAM TELL. 1 reel. Inflammable.
- A-28. DWELLERS OF THE DEEP. 1 reel. Inflammable.

#### Series B

- B-2. HARVESTING AND TESTING SEED CORN. (International Harvester Co.) 1 reel. Non-flam.
- B-4. FARM INCONVENIENCES. Fool things that we do on the farm—Humorous, but so true to life. (International Harvester Co.) 1 reel. Non-flam.
- B-5. OUR DAILY BREAD. The production of wheat and manufacture of flour. (General Electric Co.) 1 reel. Inflammable.
- B-6. THE BENEFACTOR. Life of Thomas A. Edison and the invention of the incandescent Light. (General Electric Co.) 3 reels. Inflammable.
- B-7. AMERICA'S HERITAGE. Boy Scout Film. (Goodyear Rubber Co.) 2 reels. Inflammable.
- B-8. REVELATIONS. How X-rays are produced and their uses. (General Electric Co.) 1 reel. Inflammable.
- B-9. IRRIGATION IN ALBERTA. (Canadian Pacific R. R.) ½ reel. Inflammable.
- B-10. HARVESTING ALBERTA'S CROP. (Canadian Pacific R. R.) ½ reel. Inflammable.
- B-11. THROUGH THE CANADIAN ROCKIES. (Canadian Pacific R. R.) ½ reel. Inflammable.
- B-12. CUBA—THE ISLAND OF SUGAR. The transformation of 110,000 acres of forest into modern sugar plantation. How cane sugar is produced. (General Electric Co.) 2 reels. Inflammable.
- B-13. THE SUGAR TRAIL. Structure of sugar beet and making of beet sugar. Animated statistics on the sugar industry. (General Electric Co.) 1 reel. Inflammable.
- B-14. EVANGELINE LAND. (Canadian Pacific R. R.) ½ reel. Inflammable.
- B-24. THE LIGHT OF A RACE. The history of house lighting from the torch to the electric light. (General Electric Co.) 1 reel. Inflammable.
- B-25. BEYOND THE MICROSCOPE. Actual photographs and animated models showing the chemical composition and molecular structure of water. (General Electric Co.) 1 reel. Inflammable.
- B-28. LAND OF COTTON. A general film on cotton growing, marketing, and manufacture. (General Electric Co.) 2 reels. Inflammable.
- B-31. WIZARDRY OF WIRELESS. Introductory motion pictures show evolution of communication. By means of animated diagrams the theory and operation of the sending and receiving apparatus for radio communication is shown. Slightly technical. (General Electric Co.) 2 reels. Inflammable.
- B-33. WHITE MAGIC. Winter sports in Canada—tobogganing, skiing, sleighing, coasting, and snowshoeing. (Canadian Pacific R. R.) 1 reel. Inflammable.

- B-34. SHEEP. A general reel on sheep. Treats briefly, why raise sheep; care and management. (International Harvester Co.) 1 reel. Non-flam.
- B-35. WILD-WESTING DE LUXE. Exhibitions given by cowboys on a western ranch for Eastern tourists. Interesting, humorous. (Canadian Pacific R. R.) 1 reel. Inflammable.
- B-36. IN OLD FRENCH CANADA. Primitive home life in French Canada and historic scenes around Quebec. (Canadian Pacific R. R.) 1 reel. Inflammable.
- B-37. TAKING TO THE TALL TIMBER. Lumbering in Canadian Northwest. (Canadian Pacific R. R.) 1 reel. Inflammable.
- B-38. HOME CANNING. Steps in canning by the Cold Pack method. (International Harvester Co.) 1 reel. Non-flam.
- B-40. A WOOLEN YARN. A detailed presentation of the modern method of making wool into cloth contrasted with that of the early pioneers. (General Electric Co.) 1 reel. Inflammable.
- B-42. CONCERNING CROSSARMS. Covers important processes of telephone and telegraph crossarm and conduit manufacture and distribution. Beautiful views of Mt. Rainier and the Cascade Mountains. (Western Electric Co.) 1 reel. Inflammable.
- B-44. CEDAR CAMPS IN CLOUDLAND. A scenic survey of the pole-making industry amid the mountains of the North Pacific coast. Some beautiful views of the mountains. (Western Electric Co.) 1 reel. Inflammable.
- B-45. HEALTH'S FOUNDATION. Story of leather and process of tanning. Maps show regions from which are obtained the materials used in tanning. Good for geography classes. (American Sole and Belting Leather Tanners.) 2 reels. Non-flam.
- B-46. WESTERN STUFF. Life on a Canadian ranch. Shows broncho busting and branding. (Canadian Pacific R. R.) 1 reel. Inflammable.
- B-47. FOUR DAYS OPEN SEA. Activities on an ocean liner enroute to Liverpool, England. (Canadian Pacific R. R.) 1 reel. Inflammable.
- B-48. PLAY SAFE. Visualizes in an interesting and educational manner several of the everyday occurrences that happen to the careless driver and equally careless pedestrian. (Rothacker—U. S. Dept. of Interior and Gen. Motors Corp.) Dedicated to Safety First Education. 1 reel. Non-flam.
- B-49. SCHOOL DAYS. Shows development of schools from the one-room rural school to the modern consolidated school. Advantages of consolidation. (International Harvester Co.) 1 reel. Non-flam.
- B-50. WORKING FOR DEAR LIFE. Advocates yearly medical examination to safeguard the health. Especially good for "Better Health" Campaigns. (Metropolitan Life Insurance Co.) 1 reel. Non-flam.
- B-51. HOW DREAMS COME TRUE. The realization of an ambitious boy to own his own bicycle. (Rothacker) 1 reel. Non-flam.
- B-52. SAVING COAL AT HOME. Shows the origin of coal, emphasizes the money-saving possibilities of insulating heating pipes. (U. S. Bureau of Mines) 1 reel. Non-flam.
- B-53. TRANSPORTATION. Evolution of transportation to the modern electric locomotive, its construction. (U. S. Bureau of Mines) 2 reels. Inflammable.

- B-54. STORAGE BATTERY. Manufacture of Willard batteries. (U. S. Bureau of Mines) 2 reels. Inflammable.
- B-55. SULPHUR. Mining of sulphur, boiler and compressor plants. (U. S. Bureau of Mines) 2 reels. Inflammable.
- B-56. THE CITY OF SUNSHINE. A scenic film depicting scenes in and around Victoria, B. C. (Canadian Govt.) 1 reel. Non-flam.
- B-57. QUEEN OF THE COAST. An interesting scenic picture of Vancouver, B. C. and surrounding country. (Canadian Govt.) 1 reel. Non-flam.
- B-58. AMID ALPINE SNOWS. Many beautiful scenes among the lakes and mountains of Canada. (Canadian Govt.) 1 reel. Non-flam.
- B-59. CAMP FIRES AMONG SNOW PEAKS. Scenes in the Bow Valley and ascent of alpinists in Yoho and Wilcox Pass region of Canada. (Canadian Govt.) 1 reel. Non-flam.
- B-60. ENEMY OF THE FOREST. The evils of carelessness in the woods, the disastrous results therefrom and the steps taken by the Canadian Govt. towards fire protection in its forests. (Canadian Govt.) 1 reel. Non-flam.
- B-61. CITY OF HOMES. Views in London, Ontario, Canada, in which over eighty per cent of the population are home owners. (Canadian Govt.) 1 reel. Non-flam.
- B-62. A SCENIC WONDERLAND. A descriptive scenic film of Jasper National Park, Alberta, Canada. (Canadian Govt.) 1 reel. Non-flam.
- B-63. WHERE SALMON LEAP. A salmon fishing trip up the Restigouche River in northern New Brunswick, Canada. Shows Scenic views of the river. (Canadian Govt.) 1 reel. Non-flam.
- B-64. PARADISE REDISCOVERED. A scenic-industrial film of the apple industry in Okanagan Valley, Canada. (Canadian Govt.) 1 reel. Non-flam.
- B-65. WITH ROD AND FLY. The experiences of a fishing party on a small lake near Ottawa, Canada. (Canadian Govt.) 1 reel. Non-flam.
- B-66. A BIRD CITY. A bird film taken near Moose Jaw, Sask., Canada. Shows nesting, mating, swimming and flying of the gull, heron, tern, and many other birds. (Canadian Govt.) 1 reel. Non-flam.
- B-70. YOKE OF THE PAST. Development of farm machinery and household equipment. (General Electric Co.) 3 reels. Inflammable.
- B-71. ANTHRACITE. Mining, screening and washing anthracite coal. (General Electric Co.) 1 reel. Inflammable.
- B-72. PILLARS OF SALT. Mining and refining salt. (General Electric Co.) 1 reel. Inflammable.
- B-73. WHEN A MAN'S A MINER. A story with a "safety first" appeal; set in a mining district. (U. S. Bureau of Mines) 4 reels. Inflammable.
- B-74. WHERE SNOW TIME IS JOY TIME. Winter sports in Canada. (Canadian Govt.) 1 reel. Non-flam.
- B-75. WITH DOG TEAM AND SNOW-SHOES. A winter vacation in Ontario, Canada. (Canadian Govt.) 1 reel. Non-flam.
- B-76. THE MAGIC OF COMMUNICATION. A photo-description of the principles of telephony. Good for physics class. (Southwestern Bell Tel. Co.) 2 reels. Non-flam.
- B-77. MY HERO. Animated cartoons. (Southwestern Bell Tel. Co.) 1 reel. Non-flam.

- B-78. THE LAND OF THE WHITE CEDAR: Getting out telephone posts in the snow-covered northwest country. (Southwestern Bell Tel. Co.) 1 reel. Non-flam.
- B-79. POLE PUSHERS OF PUGET SOUND. Bringing telephone poles down to the sea; storing; loading on lumber schooners. (Southwestern Bell Tel. Co.) 1 reel. Non-flam.
- B-80. THAT LITTLE BIG FELLOW. Mr. Telephone Current is a little sprite who steps into the telephone system, which he travels from end to end. (Southwestern Bell Tel. Co.) 1 reel. Non-flam.
- B-81. PREVENTING DIPHTHERIA. Shows the value of the Schick test in preventing diphtheria. (John Hancock Life Ins. Co.) 1 reel Non-flam.
- B-82. ONE SCAR OR MANY. Production and preparation of vaccine; its use in stamping out smallpox. (Metropolitan Life Ins. Co.) 1 reel. Non-flam.
- B-83. WATER POWER. Shows how the power of Niagara Falls is converted into electricity. (U. S. Bureau of Mines) 2 reels. Non-flam.
- B-84. NEW WAYS FOR OLD. Use of toxin antitoxin in prevention and cure of diphtheria. (Metropolitan Life Ins. Co.) 1 reel Non-flam.
- B-86. DRINKING HEALTH. Shows the benefits of drinking water and the importance of avoiding the common drinking glass, including the unsterilized glass used at the ordinary soda fountain. (Gen. Health Bureau—U. S. Pub. Health Service) 2 reels. Non-flam.
- B-87. INSIDE STORY OF YOUR TELEPHONE. Shows views of many parts of the world from which the material for the construction of the telephone is obtained. (Southwestern Bell Telephone Co.) 2 reels. Non-flam.
- B-88. THE GIRL WHO FOUND HERSELF. Shows how athletics helped a girl overcome lack of self-confidence. (Western Electric Co.) 1 reel. Non-flam.

### Series F

(Ford Educational Weekly)

All Inflammable

- F-67. Quarrying Asbestos,  $\frac{1}{2}$  reel. (Wound with Canadian Girl Guides,  $\frac{1}{2}$  reel.)
- F-72. New Orleans. 1 reel.
- F-80. Big Trees. 1 reel
- F-104. How news is made. The complete story of a newspaper from the reporter to the newsboy. (The Detroit Press.) 2 reels.
- F-113. A trip to Kilauea Volcano. 1 reel.
- F-117. A Mile in the Sky. 1 reel.
- F-133. Hang it All—The story of Making Wall Paper. 1 reel.
- F-137. Where the Spirit that Won was Born. 1 reel.
- F-144. Northern Sports under Southern Skies. 1 reel.
- F-150. From Mud to Mug—The Story of Pottery Making. 1 reel.

### Series K

- K-1. America's Answer. 5 reels. Inflammable.
- K-3. Our Bridge of Ships. 2 reels. Inflammable.
- K-4. Price of Peace. 5 reels. Inflammable.



## Series OR

## Official War Review—One-reel subjects

## All Inflammable

- OR-1. Bombing planes; French troops; Italian troops go over the mountains; dogs taking provisions over mountain trail; Lloyd George and Blue Jackets; American and British troops crossing English Channel.
- OR-2. Italian Artillery and Infantry in attack on Austrians at Monte Tomba; Americans at Cambria; American engineers; French troops returning from and going to front; Irish Cavalry advancing; tank returns with captured German cannon; General Allenby in Palestine.
- OR-3. The French stand guard; Algerian troops; Italian front; camouflaged pontoons dragged over the mountain; completed pontoon bridge with troops crossing; Red Cross on Balkan front; British guns in action; U. S. Marines reviewed by General Pershing before going to front; marching song of Marines.
- OR-4. After a German drive; German prisoners; munition trains; field artillery prepares for an attack; with the Italians; Austrian prisoners; on the road to victory.
- OR-5. General Foch; British following fleeing Turks into Palestine; camel train crossing desert; dragging big guns across desert; air raiders—Italian town destroyed; pursuing the raiders; Italy celebrates third year of fighting; Americans, British and French take part in celebration; camouflaged signal station; carrier pigeons; wash day in American camp.
- OR-6. Balance of man power; American troops continue to pour into France; a front line post of Y.M.C.A.; an Italian position near Monte Tomba; King Albert of Belgium visits Italian front; British training for tank corps; Reims once more saved by French and Italians.
- OR-7. Making uniforms for American soldiers; making shoes for American soldiers; Uncle Sam's laundry; daily supply of meat; building and launching ships; Red Cross building; Y.M.C.A.; Knights of Columbus; Masons.
- OR-9. Americans in aviation; French air men given medals; heights of upper Piave; Italians advancing over mountains; dogs bringing provisions to Italian outposts; Clemenceau visits Aisne front; King George decorating soldiers; airships guard transports crossing Channel.
- OR-10. Fighting by British and Italian soldiers; arrival of American soldiers in France; British troops and refugees; dogs carry messages; American Troops on board ship on way to France.
- OR-11. Shows British, French, Italian, Portuguese, and Americans in battle; French Cavalry; tanks in action.
- OR-13. Pontoon bridges used by Italian troops; railroad guarded day and night; tractors; Yanks march in review before Duke of Connaught; entertainment for soldiers—time for laughing.
- OR-15. St. Quentin; Hindenburg line; surrender of German Army to Allies; surrender of German Fleet.

## Series Y

- Y-1. ALICE IN HUNGERLAND. This film is an appeal for relief of sufferers in the Near East. (Committee for Near East Relief.) 1 reel. Inflammable.

## Series Z

Note: The films in "Series Z" contain some advertising. They have so much educational value, however, that we are listing them here. The user understands that we do not necessarily endorse any of the products shown.

- Z-2. KEEPING THE BOY ON THE FARM. Modern Dairy Barn Equipment. (James Manufacturing Co.) 2 reels. Non-flam.
- Z-8. DELCO LIGHT. Del-Home Light Co. 3 reels. May be obtained on ten days' notice.
- Z-9. MAKING MUSICAL INSTRUMENTS. Shows manufacture of the saxophone. (Atlas.) 1 reel. Non-flam.
- Z-10. JUPITER'S THUNDERBOLTS. History of electricity and how a storage battery is made. (Willard.) 1 reel. Inflammable.
- Z-12. THE STORY OF THE ORANGE. Complete story of Sunkist Oranges from seed to market. (Citrus Fruit Growers' Ass'n.) 3 reels. Inflammable.
- Z-13. JEAN GROLIER. The Manufacture of Uneeda Biscuits. (National Biscuit Co.) 1 reel. Inflammable.
- Z-14. SUDS. The Manufacture of Power Washers. (Apex.) 1 reel. Inflammable.
- Z-15. THE STORY OF A STICK. Lumbering. (Long Bell Lumber Co.) 1 reel. Inflammable.
- Z-17. SIXTH SENSE TEST. (Calumet Baking Powder Co.) ½ reel. Inflammable.
- Z-19. THE ROMANCE OF GLASS. The evolution of glass manufacture, the manufacture of glass fruit jars and demonstration of cold-pack canning. (Atlas-Ball Brothers.) 1 reel. Inflammable.
- Z-25. DENTAL HYGIENE. Joan and Jimmy visit zoo to see how animals keep teeth clean. Later, visit dentist; have teeth cleaned; are instructed in tooth brush drill. Structure of teeth and effect of decay shown by animated drawings. (Colgate-Pathescope) 2 reels. Non-flam.
- Z-26. THE BETTER WAY OF MILKING. The circulation of blood of a cow and secretion of milk in udder is shown by animated diagrams. The operation and construction of the DeLaval Mechanical Milker is shown by means of animated drawings, diagrams and pictures. (DeLaval-Atlas.) 1 reel. Non-flam.
- Z-27. THE TEXAS TRAIL TO YOUR TABLE. Story of beef production from Texas ranch through stock yards, packing houses, to consumer's table. (Swift and Co.) 1 reel. Non-flam.
- Z-31. ROCK DRILLING. Air drills in mines, quarries, construction of a canal. (U. S. Bureau of Mines) 2 reels. Inflammable.
- Z-34. ABSORBING STORY OF THIRSTY FIBRE. Lumbering in the north woods in winter. Logs are converted into wood pulp, then into paper and paper towels. (Scott-Leggett.) 1 reel. Inflammable.
- Z-35. CEMENT. The production and uses of cement. (Atlas Cement Co.) 1 reel. Non-flam.
- Z-36. INCUBATOR. Shows the construction and operation of the Old Trusty Incubator, also candling and brooding. (Johnson-Atlas.) 1 reel. Inflammable.
- Z-39. ABRASIVES. This film gives the details of manufacture of Carborundum and Auxolite sharpening stones together with illustrations of their many uses. Views of Niagara Falls. (Carborundum Co.—U. S. Bureau of Mines.) 4 reels. Non-flam.

- Z-40. FROM FOREST TO FIRESIDE. Cutting spruce and poplar in Maine, floating to mills, manufacture into paper, and printing the Youth's Companion. (Youth's Companion—Worcester Film Corp.) 3 reels. Non-flam.
- Z-41. PLEASE PASS THE CRANBERRIES. Deals with cranberry production in Cape Cod region. Shows preparation of the bog, planting, care, harvesting, and marketing the fruit. Good for geography and home economics classes. (Atlantic Film Co.) 1 reel. Non-flam.
- Z-46. MAN'S CONQUEST OF TIME. Traces briefly the evolution of land transportation. Shows in detail the manufacture of automobiles. (Chevrolet Motor Co.) 2 reels. Non-flam.
- Z-48. FOUNTAIN OF YOUTH. Compares water heating system of the ancient Roman baths with a modern system. Some interesting views of Roman home life. (Atlas-Crane.) 2 reels. Non-flam.
- Z-50. ASBESTOS. Mining and cobbling of asbestos, sorting, bagging, and shipping, manufacture of auto brake lining and other products. (U. S. Bureau of Mines) 4 reels. Inflammable.
- Z-51. LEAD MINING AND MILLING. Details of operations in mining and milling lead, preparatory to smelting. (U. S. Bureau of Mines) 3 reels. Non-flam.
- Z-52. LEAD SMELTING. Shows in detail smelting and refining of lead, molding into pigs. (U. S. Bureau of Mines) 2 reels. Non-flam.
- Z-53. ALLOY STEEL. Testing of pig-iron for carbon content; rolling into billets, rolling of spring steel and cutting into proper lengths. (U. S. bureau of Mines) 4 reels. Inflammable.
- Z-54. GASOLINE. Tank farm, pumping stations, distillation, removal of impurities, recovery from natural gas, test laboratories. (U. S. Bureau of Mines) 3 reels. Non-flam.
- Z-56. INSIDE OUT. Story of digestion. Good for physiology classes. (Picture Service Corp.—Standard Oil Co.) 1 reel. Non-flam.
- Z-57. MAGIC JAR. Early struggles of man for food. Cold pack method of canning fruits, vegetables, and meat. Manufacture of fruit jars. (Ball Bros.) 1 reel. Non-flam.
- Z-58. DYNAMITE. The manufacture of dynamite and its uses. (U. S. Bureau of Mines) 2 reels. Non-flam.
- Z-59. THE FLYING BANDIT. The diabolical plottings of the fly tribe against human beings. Interestingly shown by animated drawings. (Picture Service Corp.) 1 reel. Non-flam.
- Z-60. THE WAY TO SUCCESS Tells in drama form how a business succeeded by building up good will. (Advertising Specialty Assn.) 2 reels. Non-flam.
- Z-61. T-C YOUR SIXTH SENSE. Temperature control. Manufacture and uses of thermometers. (Picture Service Corp.) 1 reel. Non-flam.
- Z-63. CEMENTING THE CENTURIES. Story of manufacture of Alpha Cement. Very good animated diagrams. (Alpha Portland Cement Co.) 2 reels. Non-flam.
- Z-64. LAYING THE WORLD'S FASTEST OCEAN CABLE OFF NEW-FOUNDLAND. Incidents filmed during the work of connecting England and America with the new permalloy submarine telegraph cable. (Western Electric Co.) 2 reels. Non-flam.
- Z-65. FROM COCOON TO SPOOL. Hatching and culture of the silkworm, spinning the cocoon, moth hatching, laying eggs, unwinding cocoons,

- and factory scenes showing spinning and dyeing of silk thread. (Corticelli Silk Co.) 1 reel. Non-flam.
- Z-66. MILK. Scenes on a dairy farm, diagrams and micro-photographs showing composition of milk, and a trip through the Carnation plant showing the process of evaporating milk, supplemented by diagrams. (Carnation Milk Products Co.) 1 reel. Non-flam.
- Z-68. YOUR BOOK. The history and processes of book making. (Ginn & Co.) 2 reels. Non-flam.
- Z-69. THE FINE ARTS IN METAL. Casting of artistic bronzes by well known sculptors; manufacturing processes of sterling silver. (Gorham Silver Mfg. Co.) 3 reels. Non-flam.
- Z-70. THE MAKING OF TWINE. Cultivating and harvesting sisal; preparing fiber and manufacturing it into twine. (International Harvester Co.) 1 reel. Non-flam.
- Z-71. THE LAND OF CHERRIES. Growing, picking, and canning cherries. (International Harvester Co.) 1 reel. Non-flam.
- Z-72. THE LEAVENER OF LIFE. A boy scout learns the value of fellowship as a leavening agent. The film ends with a trip through a baking powder plant. (Rothacker) 1 reel. Non-flam.
- Z-73. ACROSS SEVEN SEAS. Scenes in Java; production of cassava and its manufacture into flour; making this flour into tapioca. (Post Products Co.) 1 reel. Non-flam.
- Z-75. THE ROMANCE OF RAYON. An excellent film showing how artificial silk is made from wood pulp and cotton fiber. (Viscose-Pathescope) 2 reels. Non-flam.
- Z-76. BLUE CENTER. Manufacture and uses of hemp-center wire rope. (Roebing's Sons) 3 reels. Non-flam.
- Z-77. WHAT THE JOB PAYS. Shows that a boy can be successful in business without sacrificing the fun in life. (Western Electric Co.) 2 reels. Non-flam.
- Z-78. THE DOINGS OF TURP AND TINE. Shows methods of distilling turpentine. Good for chemistry classes. (Hercules Powder Co.) 2 reels. Non-flam.
- Z-79. LISTENING IN. Shows manufacture of modern radio. (Rothaker-Sparton Radio Co.) 1 reel. Non-flam.

#### M. U. SERIES

##### All Inflammable

These films are available to schools, churches, farmer's clubs, alumni associations and other educational agencies without payment of an inspection fee.

- MU-1. Missouri-Kansas football game, 1921. 1 reel.
- MU-2. TALE OF THE TIGER. Scenes of activities at the University of Missouri, 1921. 4 reels.
- MU-3. MIRROR OF OLD MIZZOU. 1922 Home-coming parade, Missouri-Kansas football game, review of 1922 football season. 3 reels.
- MU-4. M. U. Day at State Fair; Registration day, Fall, 1922; R. O. T. C. Freshmen drilling; Student Council paddling; "Daddy" Defoe's 30th wedding anniversary; Bob Simpson hurdling; "Beau Brummel" cast; Frosh-Soph Contest; Blumer and Chuck Lewis. 1 reel.
- MU-5. Missouri-Grinnell football game, 1922; the thundering thousand at the Grinnell game; 1922 Barnwarming; Vocational Agriculture students; Home Economics convention. 1 reel.

- MU-6. Missouri-Kansas Aggies football game, 1922; interclass football games; Round Table Club; Junior Follies, presented by Stephens College girls; Armistice Day parade, 1922; Razzers and Jungle Janes at the Washington Game; Freshman-Sophomore contest. 1 reel.
- MU-7. Student election; St. Pat's; Copperhead; Engineer-Lawyer Fight, 1923. 1 reel.
- MU-8. Farmers' Fair and Commencement, 1923. 1 reel.
- MU-9. High School Day at University of Missouri, 1923. 1 reel.
- MU-10. Prominent Guests; Initiations; Churches; Pistol Team; Paddling Ag. Officers; Beauty Queens. 1 reel.
- MU-11. Engineers' Convention; Farmers' Week; Girls' Rifle Team; Basketball Team, 1923. 1 reel.
- MU-12. Home-coming Parade, 1923. 1 reel.
- MU-13. Home-coming Game, 1923. 1 reel.
- MU-14. Missouri-Kansas Game, at Lawrence, 1923. 1 reel.
- MU-15. Missouri-Kansas Aggies Game, 1924. 1 reel.
- MU-16. Missouri-Washington Game, 1924.  $\frac{1}{2}$  reel.
- MU-17. Missouri-Oklahoma Game, at Norman, 1924. 1 reel.
- MU-18. Homecoming parade; Homecoming (Kansas) Game, 1924. 2 reels.
- MU-19. Missouri-California Game, at Los Angeles, 1924. 2 reels.
- MU-20. Missouri-Nebraska football game, 1925. 1 reel.
- MU-21. Missouri-Kansas football game, 1925. 1 reel.
- MU-22. Missouri-Ames football game, 1925. 1 reel.
- MU-23. Missouri-Oklahoma football game, 1925. 1 reel.
- MU-24. Campus Views, 1925; also views of dedication ceremony and home-coming game, 1926. 1 reel.

### RENTAL FILMS

(All inflammable except COLUMBUS and MYLES STANDISH)

The following films are furnished to schools and other educational institutions on a non-profit rental basis, the entire rental fee received being used to purchase films or to inspect or repair them, thus bettering the film service to the state. The rental fee per film per showing is indicated below and is payable in advance or C. O. D. In cases where the entire 45 reels are ordered and payment made in advance, only \$55.00 will be charged, the school receiving the reels in lots as desired, subject only to previous bookings to other schools.

E-3.	King Lear	5 reels.	7.50
E-4.	Courtship of Myles Standish.	5 reels	7.50
E-5.	Silas Marner.	7 reels	10.00
E-6.	The Mill on the Floss	5 reels.	7.50
E-8.	The Vicar of Wakefield.	7 reels.	10.00
E-9.	Cinderella.	4 reels.	6.00
E-10.	Christopher Columbus	8 reels	8.00
E-11.	Alice in Wonderland	4 reels	3.00

### CHRONICLES OF AMERICAN PHOTOPLAYS

These films, produced by the Yale University Press, are absolutely authentic portrayals of the great epochs in American history, and are especially good for school use and for community and church programs.

These films are not on deposit in our library, but we make bookings and arrange for shipment. The price of the films is \$5.00 per reel per day for strictly educational

\*showings. When used for entertainment, the rate is determined by the Yale University Press Film Service for each individual showing. Orders should be placed at least two weeks before the showing date. State whether for class, assembly, or entertainment, and whether admission is to be charged.

COLUMBUS and JAMESTOWN are each four reels. All others are three reels in length. The subjects are as follows:

Columbus	The Eve of the Revolution
Jametown	Yorktown
The Pilgrims	Vincennes
The Puritans	Daniel Boone
Peter Stuyvesant	The Frontier Woman
Wolfe and Montcalm	Alexander Hamilton
The Gateway to the West	Dixie
The Declaration of Independence	

### LANTERN SLIDE SETS

Each set, except those marked with an asterisk (\*), is accompanied by a printed or typewritten set of notes. These notes will be sent in advance upon request.

The following slides are made available through the courtesy of the International Harvester Company.

	No. of slides in set.
IHC-1. Corn is King.	57
IHC-2. Alfalfa on Every Farm.	59
IHC-3. A Fertile Soil Means a Prosperous People	40
IHC-4. Livestock on Every Farm.	58
IHC-5. Dairying. The Cow Makes the Farm More Profitable.	55
IHC-6. Greater Profit from the Oat Crop.	56
IHC-7. Farm Poultry Pays	60
IHC-8. Weeds Mean Waste.	60
IHC-9. Home Economics and Sanitation.	58
IHC-10. Fight the Fly.	59
IHC-11. Great Forward Movement in Education.	60
IHC-12. Diversified Farming for the South.	47
IHC-13. Home Canning by the Cold Pack Method.	60
IHC-15. Make a Garden Pay.	60
IHC-17. Birds.	60
IHC-18. Rural Schools.	60

The following slides are made available through the courtesy of the States Relations Service, United States Department of Agriculture.

SRS-129. Judging Sheep*	33
SRS-7. The Home Project in Teaching Agriculture	61
SRS-14. Birds and Their Relation to Agriculture	51
SRS-17. Production of Poultry and Eggs on the Farm.	51
SRS-18. Production of Clean Milk.	49
SRS-23. Orchard Management.	50
SRS-31. Renovating the Neglected Apple Orchard.	50
SRS-33. City and Suburban Vegetable Gardening.	50
SRS-41. Types and Breeds of Beef Cattle.*	33
SRS-42. Dairy Cattle and Dairy Judging.*	56

SRS-43. Types and Breeds of Horses*	41
SRS-44a Breeds of Swine*	21
SRS-44b Breeds of Sheep*	27
SRS-45. Breeds of Poultry.*	50
SRS-48a Wheat Growing.*	39
SRS-48b Wheat Harvesting.*	49
SRS-50. School Buildings and Equipment.*	55
SRS-9. Tomatoes for Rural Schools.	57
SRS-21. Corn Production.	52
SRS-27. Farm Vegetable Garden.	50
SRS-46. Poultry Housing and Handling.*	40
SRS-57. Swine Project in Vocational Agriculture.	30

The following slides are made available through the courtesy of Armour and Company.

Sheep. Four slides showing by-products from sheep.

Hogs. Four slides showing by-products from hogs.

The following slides are made available through the courtesy of the General Electric Company. Rather technical.

GE-45. Seeing through the Opaque. The X-Ray in manufacturing, commerce and surgery.	59
GE-10. Electricity on the Farm.	29
GE-47. Electricity, the Wonder Worker.	50
GE-49. Elementary Principles of Light and Lighting.	8
GE-51. Panama Canal.	60

O-1. Ohio Flood. (H. J. Otten.)*	8
PCA-1. Concrete on the Farm. (Portland Cement Association.)*	25

The following slides are made available through the courtesy of the Barrett Company.

B-1. The Apple	50
B-2. The Potato	50

VA-1. Types and Breeds of Dairy Cattle (Harper, Cornell Univ.)*	42
VA-1a. Types and Breeds of Dairy Cattle. (Harper, Cornell Univ.)*	23
VA-2. Types and Breeds of Swine. (Harper, Cornell Univ.)*	30
VA-3. Poultry—How to Cull. (Henderson, U. of Mo.)*	13
VA-4. Class of 5 Holsteins for Instruction in Judging. 4 views of each*	20
VA-5. Class of 4 Holsteins for Judging. 4 views of each individual. This supplements set VA-4, and is to be used only after VA-4.*	16
VA-6. Honey Bee.	44
VA-7. Potatoes. Owner of negatives, J. V. Ankeney.	10

E-1. American Cities.	76
E-61. American History—Columbus to Henry Hudson.	35
E-62. American History—Henry Hudson to Revolutionary War.	28
E-63. American History—Revolutionary War.	71
E-64. American History—Revolution to Jackson's Administration.	41
E-65. American History—Jackson's Administration to Civil War.	47

E-66.	American History—Civil War.	43
E-67.	American History—After the Civil War.	67
E-43.	American Literature.	75
E-3.	Astronomy.	46
E-4.	Athens and Vicinity.	54
E-74.	Better Homes—Boy-Built Houses.	12
E-75.	Better Homes—History of Movement in America.	15
E-76.	Better Homes—Home Furnishings.	19
E-77.	Better Homes—Reconditioning Houses; Improving Home Grounds.	11
E-78.	Better Homes—School Cottages for Home Making.	9
E-48.	Birds.	28
E-5.	Boston.	16
E-6.	Buildings and Scenes from the College of Agriculture.	45
E-7.	Buildings and Scenes in England and Spain	38
E-79.	Buildings and Scenes in France and Belgium	53
E-8.	Buildings and Scenes in Germany and Central Europe.	64
E-9.	Buildings and Scenes in Ireland and Scotland.	23
E-10.	Buildings and Scenes in Russia and Turkey.	28
E-11.	Buildings and Scenes in Switzerland and Italy.	35
E-12.	Buildings and Scenes at the University of Missouri.	60
E-13.	Caesar's Gallic Wars (Books I to VI)	44
E-14.	Caesar's Gallic Wars (Later Books)	34
E-30.	California.	17
E-70.	China (colored)	16
E-31.	Colorado.	34
E-52.	Consolidation of Schools	50
E-15.	Egypt.	69
E-44.	English Literature.	45
E-51.	Fairy Tales (colored)	21
E-53.	Foods and Health (colored)	10
E-32.	Grand Canyon of the Colorado (colored)	18
E-16.	Greece, Outside of Athens.	58
E-17.	Greek History.	50
E-18.	Greek and Roman Mythology	34
E-69.	Hawaiian Islands.	36
E-80.	India	22
E-19.	Japan.	18
E-35.	Madonnas.	20
E-54.	Mediaeval History—Early Period.	45
E-55.	Mediaeval History—Middle Period.	27
E-56.	Mediaeval History—Later Period.	34
E-49.	Mexico.	34
E-50.	Missouri.	46
E-20.	Missouri Writers	18
E-57.	Modern History—To reign of Louis XIV.	41
E-58.	Modern History—Louis XIV through Napoleonic Era	33
E-59.	Modern History—Congress of Vienna to 1914.	22
E-60.	Modern History—The Great War, and Afterwards	56
E-21.	Napoleon.	42
E-22.	New Era in Country Schools and Country Life.	104
E-23.	Niagara Falls and Hudson River.	23



E-36.	Paintings from Leonardo da Vinci, Raphael, Andrea del Sarto, Titian	40
E-37.	Paintings from Corot, Millet, and Rosa Bonheur.	18
E-38.	Paintings from Rubens and Rembrandt.	30
E-39.	Paintings from Van Dyck, Turner, Reynolds, Gainsborough and minor artists.	29
E-40.	Paintings from Whistler, Stuart, Sargent, and Brush	16
E-24.	Palestine.	32
E-25.	Parthenon.	26
E-71.	Physical Geography and Geology, Set I. Weathering, Rivers, Ground Water, Plains, and Mountains.	33
E-72.	Physical Geography and Geology, Set II. Volcanoes, Earthquakes, Geysers, Snow Fields, Glaciers, and Lakes.	25
E-73.	Physical Geography and Geology, Set III. Coasts, Dunes, Storms and Clouds, Deserts and Fossils	17
E-26.	Pompeii	42
E-68.	Robin Hood (colored)	11
E-27.	Roman Forum.	34
E-28.	Roman History.	45
E-29.	Scenes in Arizona and Wyoming.	16
E-45.	Shakespeare	50
E-41.	Sistine Chapel.	28
E-42.	Song of Hiawatha (colored)	55
E-34.	Virgil.	87
E-33.	Yosemite Valley (colored)	12
<hr/>		
Z-1.	Silk (Corticelli Silk Company)	63
<hr/>		

### Large Cloth Charts

These charts are made available through the courtesy of the International Harvester Company.

- Chart 1. Corn is King.
  - Chart 2. Alfalfa on Every Farm.
  - Chart 3. A Fertile Soil Means a Prosperous People.
  - Chart 4. Livestock on Every Farm.
  - Chart 5. Dairying. The Cow Makes the Farm More Profitable.
  - Chart 6. Greater Profit from the Oat Crop.
  - Chart 7. Make More Farm Poultry.
  - Chart 8. Weeds Mean Waste.
  - Chart 9. Home Economics and Sanitation.
  - Chart 10. Fight the Fly.
  - Chart 11. Great Forward Movement in Education.
  - Chart 12. Diversified Farming for the South.
  - Chart 13. Home Canning by the Cold Pack Method.
- Weight about 35 Pounds.

### Individual Slides

The following slides may be ordered one or more at a time. Give the catalog number very carefully. There is no printed material furnished with these slides.

### FIELD CROPS AND SOILS

#### Barley

- CcAa-1 Dot Distribution Map—Barley Acreage—U.S.—Geog. World's Agr. 1917.
- Corn

CcGa-1 Dot Distribution Map—Corn Acreage—World.

CcGa-2 Dot Distribution Map—Corn Acreage—U. S.

#### Oats

CcHa-1 Dot Distribution Map—Oat Acreage—World—Geog. World's Agr. 1917.

CcHa-2 Dot Distribution Map—Oat Acreage—U. S.—Geog. World's Agr. 1917.

#### Wheat

CcSa-1 Dot Distribution Map—Spring Wheat Acreage, U. S.—Geog. World's Agr. 1917.

CcSa-2 Dot Distribution Map—Wheat Acreage—World—Geog. World's Agr. 1917.

CcSa-4 Dot Distribution Map—Winter Wheat Acreage U. S.

CcSa-3 Dot Distribution Map—Wheat Production..U. S. —Geog. World Agr. 1917.

CcSb-1 Diagram wheat kernel showing coats—Washburn Crosby Co.—1921.

CcSb-2 Diagram. Wheat kernel showing parts.

#### Alfalfa

CgAh-1 Percherons and side delivery rake—Geo. Ferich's farm—Gilman, Ill.—1918.

CgAk-1 Using Hay loader in alfalfa hay—J. P. Allyn's farm, Delavan, Wis. Aug. 1916.

CgAl-1 Hay (Alfalfa) in cock form—J. Crouch and Son, Lafayette, Ind.—1914.

Cgz-1 Grow More Legumes. Chart comparing amount of calcium in legumes and grasses.

Cgz-2 Grow More Legumes. Chart comparing amount of nitrogen in legumes and grasses.

#### Potatoes

CiEa-1 Dot Distribution Map—Potato Acreage U. S.—Geog. World's Agr. 1917.

CiEa-2 Dot Distribution Map—Potato Acreage—World.—Geog. World's Agr. 1917.

#### Flax

CmFa-1 Dot Distribution Map—Flax Acreage—U. S.—Geog. World's Agr. 1917.

CmFa-2 Dot Distribution Map—Flax Acreage—World. Geog. World's Agr. 1917.

#### Tobacco

CnTa-1 Dot Distribution Map—Tobacco Acreage—U. S.—Geog. World's Agr. 1917.

#### Weeds

CyEh-1 Yarrow. Characteristic Habitat. Colored—J. V. A. 1920.

CyIh-1 Iron weed. Characteristic Habitat. (Owner negative J. V. Ankeney.)

CyNh-1 Wild carrot. Characteristic Habitat. (Owner negative J. V. Ankeney.)

CyOh-1 Plantain. Characteristic Habitat. (Owner negative J. V. Ankeney.)

## HORTICULTURE

#### Apples

DeAa-1 Dot Distribution Map—Apple Production—U. S.—Geog. World's Agr. 1917.

#### Spirea

DmS-1 Bridal wreath (Spirea)—Dean J. H. Skinner's yard, Purdue University. 1915.

## ANIMAL HUSBANDRY

## Cattle

Fa-1 Dot Distribution Map—Cattle—Europe.

## Dairy Cattle

- FGAx-1 Ayrshire cattle lying down in pasture. J. Sherman, Willoughby, Ohio, September, 1916.  
 FGJi-1 Von Goodykoontz (little boy) with calves yoked together. Jonesboro, Ind., September, 1915.  
 FGBAf-1 Ayrshire Cow—Carston's Bridesmaid. Edgerstoune Farm. Gr. Ch. 1922.  
 FGBNb-1 Brown Swiss Bull—Nellie's Stasis. L. S. Marshall. Gr. Ch. 1922.  
 FGBNf-1 Brown Swiss Cow—Swiss Valley Girl 7th—Hull Bros. Gr. Ch. 1922.  
 FGBJb-1 Jersey Bull.  
 FGBJf-1 Jersey Cow—Fairy Lad's Sly Puss—Long View Farm. Gr. Ch. 1922.  
 FGBJf-2 Jersey Cow.  
 FGBJf-3 Jersey Cow.  
 FGBJx-1 Group of Jersey Cows in Pasture.  
 FGBHf-2 Holstein Cow—Hulda Segis Koroba. Aitkin Bros. Gr. Ch. 1921.  
 FGBHf-3 Holstein Cow—Aggie Sylvia. Gr. Ch. 1922.

## Beef Cattle

- FBbAb-1 Aberdeen Angus Bull.  
 FBbHb-1 Polled Hereford Bull.

## Dual Purpose Cattle.

- G4bRb-1 Red Polled Bull.  
 G4bRf-1 Red Polled Cows (nine). Average Yearly Production 515.61 lbs. B. F. Red Polled Cattle Club.

## Horses

- HbCx-1 Clydesdales.  
 HbMs-1 Percheron Horse.  
 HbMs-2 Head of Percheron.  
 HbMm-1 Percheron Mare. Catalina—Gr. Ch. 1922.  
 HbMx-1 Four Percherons.  
 HbOs-1 Man O'War.

## Swine

- Ia-1 Dot Distribution Map—Swine—World.  
 Ia-2 Dot Distribution Map—Swine—U. S.  
 IbBx-1 Berkshire sow and suckling pigs on forage of Rye. Purdue Farm, Ind., 1916.  
 IbCm-1 Chester White Boars.  
 IbCm-2 Chester White Barrow.  
 IbCm-4 Chester White Barrows.  
 IbCef-1 Cheshire Sow.  
 IbCem-1 Cheshire Boar, side view. Face good length, strongly dished, jowls neat.  
 IbBm-1 Berkshire Boar.  
 IbHf-1 Hampshire Sow. 1st Prize, National Swine Show, 1920.  
 IbHf-2 Hampshire Sow. 3rd Prize, National Swine Show, 1920.  
 IbHf-3 Hampshire Sow.  
 IbHm-1 Hampshire Boar.  
 IbDf-1 Duroc Jersey Sow.

IbPf-1	Poland China Sow.
IbPx-1	Black Poland China hogs on alfalfa pasture.
Sheep	
Ja-1	Dot Distribution Map Sheep—U. S.—Geog. World's Agr. 1917.
Ji-1	Class in Sheep Judging.
JbLef-1	Leicester Ewe.
JbChf-1	Cheviot Ewe.
JbSom-1	Southdown Ram.

### MISCELLANEOUS

Aa-1	Outline Map—U. S. superimposed on Australia.
Ae-1	Outline map—Australia superimposed on Europe.
YB-1	Plan for class room and laboratory for Vocational Agriculture.
NZ-1	Graph showing composition of milk solids. (Owner negative, J. V. Ankeney.)
Ka-1	Dot Distribution Map—Poultry on farms, U. S.—Geog. World's Agr., 1917.

### FILM STRIPS

The film strips listed below are available to schools equipped with a film strip projector. If the school does not possess a projector, one will be furnished, provided that 110 volt electric current is available.

Terms: Loan period one week.

Lantern and six strips,	50c
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Strips (without lantern) each	10c
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User pays transportation charges both ways.

Each strip contains from 25 to 50 views.

- |  |   |
|--|---|
| 1. Abraham Lincoln                     | 19. Niagara Falls.                              |
| 2. Ancient Rome                        | 20. Physiology (Elementary)                     |
| 3. Ancient Athens                      | 29. Pictures which beautify the home.           |
| 4. Astronomy (Elementary)              | 30. Picturesque Germany                         |
| 5. A trip through Old Mexico           | 21. Pueblo Indians.                             |
| 6. Bees                                | 22. Salt  |
| 7. Bird Beauties of the Central States | 23. Silkworms and Silk.                         |
| 8. Brick and Its Romance               | 24. Southern States                             |
| 9. Campaigns of the Revolution         | 25. Western Movement (American History Series.) |
| 10. Early Settlers                     | 26. What our Government Does for Us.            |
| 11. Food Selection                     | 27. Wild Animals of the Central Plains          |
| 12. French Explorations                | 28. Yellowstone                                 |
| 13. George Washington                  | 31. Art and Science of Laundering.              |
| 14. Grand Canyon                       |   |
| 15. Hawaiian Islands                   |   |
| 16. Holland                            |   |
| 17. Meat Packing                       |   |
| 18. Monarch Butterfly.                 |   |
|  | 32. Clean Hands for Health.                     |

The following types of service are free except for postage both ways. Loan period two weeks.

### PRINTS

Title list of any set sent upon request. Sets 9-17 inclusive have brief notes on back of each picture. Prints are approximately  $6\frac{1}{2}$  in. x  $8\frac{1}{2}$  in., and mounted on 9 in. x 11 in. mount board.

	No. in set
1. Dairy Cattle.	11
2. Holsteins. Group 1.—Class of 5 Holsteins for instruction in judging. The four views of each individual are mounted together on one board.	5
3. Holsteins. Group 2.—Class of 4 Holsteins for judging. Four views of each individual, mounted as in group 1. Supplements group 1 and to be used only after group 1.	4
4. Horses.	6
5. Swine.	4
6. Poultry (colored)	16
7. American History	11
8. Potatoes. (Reference notes.)	10
9. Plants and Flowers. (colored)	21
10. Medicinal Plants and Flowers. (Colored)	14
11. Animals. (colored)	15
12. Animals—Fur Bearing. (colored)	15
13. Birds. (colored)	20
14. Song Birds. (colored)	15
15. Paintings from French, Spanish, and Italian Artists	36
16. Paintings from Flemish, Dutch, German, English, and American Artists.	63
17. Buildings and Scenes from Europe and Egypt.	22
18. Hawaiian Islands	36
19. Indians of North America	15
20. North America and Adjacent Islands	40

### CARDS

1. Birds (International Harvester Co.) 24 cards 9 in. x 11 in. Colored pictures of 54 of our birds. Helpful notes for study.
2. American History (Interstate School Service) Cards  $4\frac{1}{2}$  in. x  $5\frac{1}{2}$  in., with notes on back. 30 cards in each series.  
 Series A—Discovery of America and Period of Colonization.  
 Series B—Early Intercolonial War; French and Indian War; Revolutionary War.  
 Series C—From Adoption of Constitution to Civil War.  
 Series D—From Civil War to League of Nations.

### STEREOGRAPHS

Stereoscopes are not furnished but information as to where they may be obtained will be given upon request. Lecture notes on back of each picture. Title lists of the sets will be sent upon request.

24 stereographs in each set

E-1 Coal	E-6 Paper.
E-2 Cotton	E-7 Rubber
E-3 Iron and Steel	E-8 Silk
E-4 Leather	E-9 Sugar
E-5 Lumber	E-10 Wool

100 stereographs on birds and 100 on flowers, all in natural colors.

25 stereographs in each set

E-11	Birds	1-25	E-15	Flowers	1-25
E-12	Birds	26-50	E-16	Flowers	26-50
E-13	Birds	51-75	E-17	Flowers	51-75
E-14	Birds	76-100	E-18	Flowers	76-100

### EXHIBITS

1. All-Bran (Kellogg)
2. \*Asbestos (Keasbey & Mattison; Johns-Manville)
3. \*Carborundum (Carborundum Co.)
4. \*Cement (Atlas Portland Cement Co.)
5. \*Chocolate (Hershey Chocolate Co; Peter Cailler Kohler)
6. \*Oil, lubricating (Vacuum Oil Co.)
7. Lead Pencils (American Lead Pencil Co.)
8. Petroleum Products (Standard Oil Co.) (shipping weight 16 lbs.)
9. Petroleum Products, EN-AR-CO (National Refining Co.)
10. \*Rope (Plymouth Cordage Co.)
11. Rubber (U. S. Rubber Co.)
12. Soap—Raw materials and finished product (Palmolive Co.)
13. \*Watch (Elgin Watch Co.)
14. Wheat (Russell-Miller Milling Co.)

### BOOKLETS AND PAMPHLETS

Please state if more than one copy is desired.

1. An Acre Home (International Harvester Co.)
2. Automobile Lubrication (Standard Oil Co.)
3. Baking Better Bread (Washburn-Crosby)
4. Better Country Schools for Missouri (International Harvester Co.)
5. Cork (Armstrong Cork Co.)
6. Educational Preparedness (International Harvester Co.)
7. Gardening (International Harvester Co.)
8. Making Things—Woodwork, Handling Rope (International Harvester Co.)
9. Marketing (International Harvester Co.)
10. Matches (Diamond Match Co.)
11. Oil. Lubrication of various types of machinery. (Vacuum Oil Co.)
12. Paper, Development of Paper-Making (Warren Co.)
13. Petroleum (Standard Oil Co.)
14. Philippines (U. S. War Department.)
15. Porto Rico (U. S. War Dept.)
16. Reclamation—Federal Irrigation Projects (U. S. Dept. Agr.)
17. Rubber (United States Rubber Co.)
18. Silk (Corticelli Silk Co.)
19. Soil. Three Studies in Soil (International Harvester Co.)
20. Spoon, Knife and Fork (Reed & Barton)
21. Telephone
  - From the Far Corners of the Earth.
  - Things Worth Knowing about the Telephone.
  - The Magic of Communication (Southwest. Bell Tel. Co.)
22. Tractor Lubrication (Standard Oil Co.)
23. Wheat and Wheat Products (Washburn Crosby Co.)

Booklets on exhibit subjects marked (\*) may be obtained without the exhibits.

**WALL CHARTS**

1. Animal Husbandry—30 different charts and pictures (U. S. Dept. Agr.)
2. Story of Corn Flakes (Kellogg)
3. Wholesale and Retail Cuts of Beef, Pork, Veal, and Lamb (U. S. Dept. Agr.)
4. U. S. Standards and Grades of Eggs (U. S. Dept. Agr.)
5. The House Fly (Standard Oil Co.)
6. Food Source Map (Armour)
7. Manufacture of Lead Pencils (American Pencil Co.)
8. Packing House By-Products (Armour)
9. Safety posters (National Safety Council)
10. Soap Making (Proctor & Gamble; Palmolive Co.)
11. Telephones—5 charts giving story of manufacture and of materials used (Western Electric Co.)
12. Wheat (Washburn Crosby)
13. Soil Liming.—5 charts (National Lime Ass'n)

Address all communications to:

Visual Education Service  
1 B. & P. A. Bldg.  
Columbia, Missouri

UNIVERSITY EXTENSION DIVISION  
VISUAL EDUCATION SERVICE  
COLUMBIA, MISSOURI

## RENTAL SERVICE

I hereby make application for the following film programs. I prefer to use these films on the dates given (give second and third choice).

I prefer to pay for them \_\_\_\_\_ (all in advance  
(C. O. D.,  
(individually in advance.

Do not use this for films other than those on *Rental List, Series E*.  
Program in advance:

Film No.	TITLE	No. of Reels	Rental Fee	Dates Desired		
				1st Choice	2nd	3rd

I agree to the following rules:

1. To use competent operators and machines in good repair.
2. To be responsible for all damage to films while in my possession and to pay for same.
3. Not to transfer films without YOUR WRITTEN PERMISSION.
4. To project only once for the fee charged.
5. To return the films promptly on the date specified.
6. To report on attendance.

SIGNED, \_\_\_\_\_  
Teacher

SIGNED, \_\_\_\_\_  
Superintendent

Date \_\_\_\_\_





# THE UNIVERSITY OF MISSOURI BULLETIN

VOLUME 29, NUMBER 26

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EXTENSION SERIES NO. 60  
CHARLES H. WILLIAMS, EDITOR

## EXTENSION DIVISION

### THE MISSOURI HIGH SCHOOL DEBATING LEAGUE



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ISSUED FOUR TIMES MONTHLY; ENTERED AS SECOND-CLASS MATTER AT THE  
POSTOFFICE AT COLUMBIA, MISSOURI—1,50¢

JULY 7, 1928



# MISSOURI HIGH SCHOOL DEBATING LEAGUE

## DEBATE QUESTION FOR 1928-29

The subject for debate by the League during 1928-29 is:

"Resolved, That the English Cabinet Method of Legislation is more efficient in England than the Committee System is in the United States."

## ORGANIZATION OF THE LEAGUE

At the meeting of Missouri high schools at the University in May, 1914, arrangements were made for the organization of a Missouri High School Debating League. Any high school of Missouri which is on the accredited list of the University of Missouri may become a member of this League by paying the annual dues, which are \$3.50, fifty cents of which is used for the purchase of trophies. Debating contests are held between the various schools composing the League, and a final contest determining the winning team for the State is held at the University on High School Day.

## DIRECTORS FOR THE COMING YEAR

Northeast District	Southwest District
M. B. Vaughn, Montgomery City	Floyd R. Ray, Mt. Vernon
Northwest District	South Central District
F. E. Vandersloot, St. Joseph	B. P. Lewis, Rolla
North Central District	East Central District
G. E. Dille, Chillicothe	Charles Banks, University City
Southeast District	West Central District
R. L. Davidson, Jr., Cape Girardeau	Paul A. Grigsby, Sedalia

## DEBATE PACKAGES

Since the organization of the League the Extension Division has furnished each year a package of debating material upon the subject chosen for the year to each high school of the State that joined the League. A portion of the material has been bought from the funds of the League but the major portion has been furnished by the Extension Division, which also assembles and mails out the packages to the high schools. The schools are furnished packages in the order of their requests, and no packages on the annual League question are furnished to high schools outside the League until all members of the League have been supplied.

In addition to the subject for debate by the League for the year 1928-29, packages upon the following additional subjects are available for any high school in the State:

Establishment of Federal Department of Education	Approximately	215 packages
Child Labor	Approximately	172 packages
Permanent Court of International Justice	Approximately	130 packages
Philippine Independence	Approximately	130 packages
Commission-Manager Plan of City Government	Approximately	95 packages
Government Ownership of Coal Mines	Approximately	25 packages
Open and Closed Shop	Approximately	12 packages
Compulsory Arbitration	Approximately	6 packages
Government Ownership of Railroads	Approximately	6 packages
National Labor Party		2 packages

These packages are furnished by the Extension Division, free of charge, except for cost of transportation. Material is included upon both the affirmative and negative sides of the question concerned. Packages must not be kept longer than the time for which the loan is made. Packages are not sent to any one school upon more than two subjects at one time, nor upon more than one subject at a time unless the supply exceeds the demands of the schools. Whenever the material is not in use in high schools, it is available for clubs or community centers, upon guarantee that it will be properly cared for and returned.

#### PRIZES OFFERED

The League each year awards silver trophy cups as permanent possessions to the school winning the State championship and to the second winner of the State. In addition, silver cups are awarded to the eight schools winning the district championships.

The University of Missouri grants a scholarship of the value of \$125 to the best individual debater.

#### MEMBERSHIP FOR 1927-28

Northeast District	
M. B. Vaughn, Director	Mokane
Auxvasse	Montgomery City
Bevier	New London
Bowling Green	Rensselaer
Center	Rutledge
Columbia	St. Brendan High School (Mexico)
Elsberry	St. Joseph's Academy (Hannibal)
Fayette	Shelbina
Frankford	Troy
Fulton	Wellsville
Higbee	Williams Woods College (Fulton)
Jonesburg	
Kirksville	
La Belle	
Louisiana	
Macon	
Madison	
Memphis	
Mexico	
Moberly	
Northwest District	
	D. W. Hopkins, Director
	Amity
	Barnard
	Benton High School (St. Joseph)
	Cameron
	Central High School (St. Joseph)
	Christian Brothers High School
	(St. Joseph)

Converse  
 Craig  
 Easton  
 Elmo  
 Excelsior Springs  
 Faucett  
 Liberty  
 Maryville  
 Maysville  
 Mound City  
 Osborn  
 Smithville  
 Weston

#### North Central District

G. E. Dille, Director

Brunswick  
 Civil Bend (P. O., Pattonsburg)  
 Coffey  
 Gallatin  
 Gilman City  
 Hale  
 Keytesville  
 Lock Springs  
 Martinsville  
 Mendon  
 Milan  
 Mooresville  
 Mt. Moriah  
 Newtown  
 Pattonsburg  
 Princeton  
 Purdin  
 Salisbury  
 Winston

#### Southeast District

R. L. Davidson, Jr., Director

Advance  
 Bell City  
 Bernie  
 Blodgett  
 Bloomfield  
 Braggadocia  
 Campbell  
 Cardwell  
 Caruthersville  
 Central High School (Cape Girardeau)  
 Clarkton  
 Cooter  
 Deering

Dexter  
 East Prairie  
 Ellington  
 Essex  
 Gideon  
 Hayti  
 Holcomb  
 Holland  
 Hornersville  
 Illmo  
 Jackson  
 Kennett  
 Lilbourn  
 Malden  
 Marston  
 Matthews  
 Morley  
 Naylor  
 New Madrid  
 Oran  
 Parma  
 Piedmont  
 Poplar Bluff  
 Puxico  
 Risco  
 Senath  
 Vanduser  
 Wardell

#### Southwest District

Floyd R. Ray, Director

Anderson  
 Aurora  
 Carthage  
 Crane  
 El Dorado Springs  
 Fordland  
 Greenwood High School  
   (S. T. C., Springfield)  
 Jasper  
 Jerico Springs  
 Joplin  
 Marionville  
 Morrisville  
 Mt. Vernon  
 Neosho  
 Nevada  
 Rogersville  
 Sarcoxie  
 School of the Ozarks (Hollister)  
 Southwest Baptist College (Bolivar)

Springfield  
Waco  
Webb City  
Willard

### South Central District

B. P. Lewis, Director

Cabool  
Chamois  
Conway  
Eldon  
Iberia Academy (Iberia)  
Lebanon  
Mountain Grove  
Newburg  
Pacific  
Richland  
Rolla  
Salem  
Sullivan  
Summersville  
Thayer  
Union  
West Plains

### East Central District

J. L. Bracken, Director

Bonne Terre  
Christian Brothers High School  
(Clayton)  
Clayton  
Desloge  
De Soto  
Elvins  
Esther  
Ferguson  
Festus  
Flat River  
Fredericktown  
Herculaneum  
Jennings

Kirkwood  
Leadwood  
McBride High School (St. Louis)  
Maplewood  
Normandy High School (Wellston)  
Perryville  
University City  
Valle High School (Ste. Genevieve)  
Webster Groves  
Wellston

### West Central District

O. L. Davis, Director

Adrian  
Bates City  
Blue Springs  
Boonville  
Clinton  
Concordia  
De la Salle Academy (Kansas City)  
Grain Valley  
Harrisonville  
Higginsville  
Holden  
Hume  
Jefferson City  
Kemper Military School (Boonville)  
Lees Summit  
Marshall  
Oak Grove  
Odessa  
Raytown  
Rich Hill  
St. Teresa Junior College (Kansas City)  
Smith-Cotton High School (Sedalia)  
Sweet Springs  
Versailles  
Warrensburg  
William Chrisman High School  
(Independence)

**DISTRICT CHAMPIONSHIP TEAMS FOR 1928****Northeast District:**

Kirksville High School  
Ruth Snyder  
Kenneth Hopewell

**Northwest District:**

Central High School, St. Joseph  
Jane Cornelius  
Helen Farnum

**South Central District:**

Mountain Grove High School  
Wayne Shannon  
Orus Wilson

**West Central District:**

Concordia High School  
Aline Davenport  
Raymond Walkenhorst

**Southeast District:**

Bloomfield High School  
Kathryn Aulsbury  
Dorothy Mallory

**Southwest District:**

Carthage High School  
Donald Ebright  
Robert Harris

**North Central District:**

Gallatin High School  
Mary Gale Norman  
Maynard Sanders

**East Central District:**

Webster Groves High School  
Carolyn Bacher  
Harry Jones

**STATE CHAMPIONSHIP RECORD**

1915—Mexico

1916—Poplar Bluff

1917—Knox City

1918—Ironton

1919—St. Joseph

1920—Excelsior Springs

1921—Lancaster

1922—Excelsior Springs

1923—Lebanon

1924—St. Joseph Central

1925—Maysville

1926—Lebanon

1927—Fayette

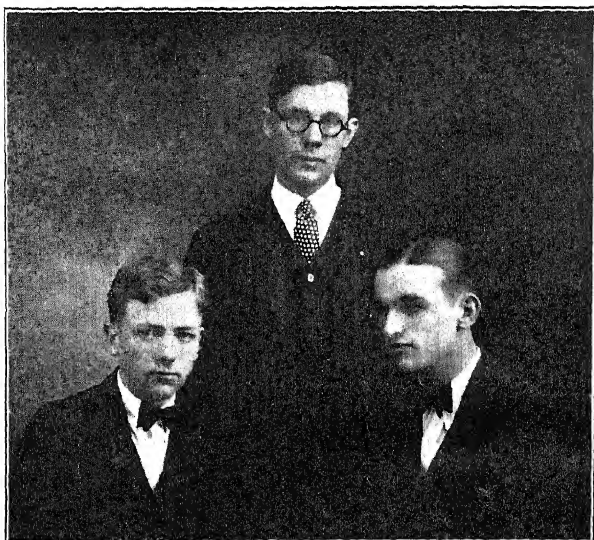
1928—Mountain Grove



UNIVERSITY OF MISSOURI BULLETIN

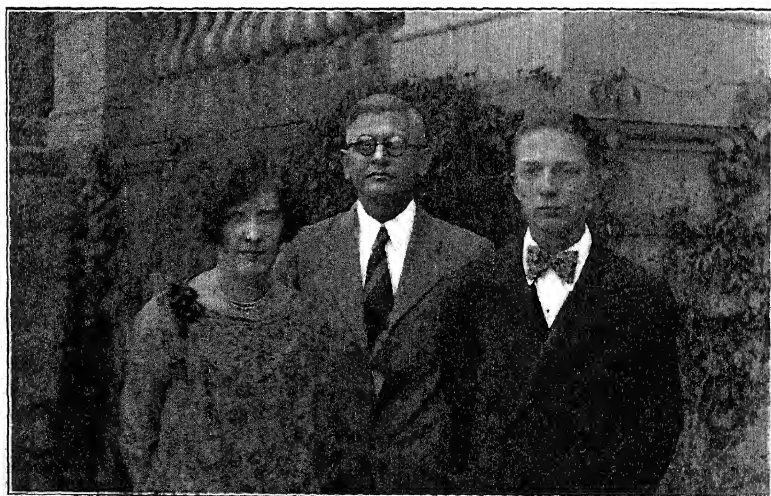
STATE CHAMPIONSHIP TEAMS FOR 1928

Winner: Mountain Grove High School



Orus Wilson'      W. B. Wisc, Coach      Wayne Shannon  
Best Individual Debater

Second Winner: Concordia High School



Aline Davenport      D. F. Meyer      Raymond Walkenhorst

## CONSTITUTION OF THE MISSOURI HIGH SCHOOL DEBATING LEAGUE

### Article I.—Name

This organization shall be known as "THE MISSOURI HIGH SCHOOL DEBATING LEAGUE."

### Article II.—Object

The object of this League shall be to promote in the high schools of Missouri the study and practice of public speaking and debate as an aid in training for citizenship.

### Article III.—Membership

SECTION 1. Any public or private high school of Missouri which is on the accredited list of the University of Missouri may become a member of this League by paying the annual dues.

SECTION 2. All schools seeking admission for any particular year must join not later than October 31 of that year.

### Article IV.—Debating Districts

SECTION 1. There shall be four or more debating districts, the number and boundaries to be determined by the Executive Committee.

SECTION 2. The Executive Committee shall have power to transfer a county from one district to another until the next annual meeting.

### Article V.—Contests

SECTION 1. Each district shall hold contests to determine the district winner between Thanksgiving Day and the fourth Saturday in March, inclusive.

SECTION 2. The inter-district contests between the winners of the various district contests shall occur between the fourth Saturday in March and the second Saturday in April, inclusive.

SECTION 3. As far as possible, the contests of each series in any district shall be held on the same evening.

SECTION 4.—Immediately after October 31 of each year the district director shall arrange the schools in his district as nearly as possible in groups of four, each of the schools in any group to debate with every other school in that group, the winner in the group to be determined by the highest percentage of victories. In case more than one school in any group has the same percentage and the highest percentage of victories, these schools shall be paired by the district director, one being eliminated by each debate until the winner is determined. In case more than two schools have the same and highest percentage, the director shall determine the order in which they debate by lot, in case there is a lack of agreement between the director and the schools as to the order of pairing. When the final winners in the groups have been determined, the director shall immediately proceed to pair them in accordance with the usual plan of pairings, that is, in series, the losing schools being eliminated by each series.

SECTION 5. The final contest between the winners of the inter-district contests shall be held on High School Day at the University of Missouri under the direction of the Executive Committee.

SECTION 6. It shall be unethical for any school to scout the debates of an opponent team. The Executive Committee of the League is hereby authorized to announce and enforce appropriate penalties for the violation of this rule.

### Article VI.—Executive Committee

SECTION 1. There shall be an Executive Committee consisting of the following members: Professor of Public Speaking in the University of Missouri; State Superintendent of Public Schools; Secretary of Committee on Accredited Schools; Director of Extension Division, University of Missouri; a superintendent or principal of an accredited school to be elected at the annual meeting of the League.

SECTION 2. The duties of the Executive Committee shall be:

- (1) To have charge of the annual dues and disburse the same.
- (2) To select the question for debate and arrange for bibliographies and reference material.
- (3) To pair the schools and fix dates and places for the inter-district contests. So far as possible, the wishes of the contesting teams shall be followed in the selection of sides.
- (4) To have full charge of the final contest.
- (5) To settle all disputes among members of the League.

### Article VII.—District Directors

SECTION 1. The Executive Committee shall appoint annually a director in each district.

SECTION 2. It shall be the duty of the District Director:

- (1) To collect the annual dues from each applicant in his district and forward the same before the first district contest to the Secretary or Treasurer of the Executive Committee.
- (2) To arrange the dates and places for the district contests and supervise the pairing of the schools. So far as possible, the wishes of the contesting teams shall be followed in the selection of sides.

### Article VIII.—Annual Meeting

SECTION 1. The annual meeting shall be held at the University of Missouri on High School Day.

SECTION 2. The members of the Executive Committee, the District Directors, and one representative from each high school shall be allowed membership in the annual meeting; no high school shall have more than one vote in said meeting.

SECTION 3. The members of the League present at any annual meeting shall constitute a quorum.

### Article IX.—Dues and Expenses

SECTION 1. The annual dues shall be \$3.00 plus a fee of 50 cents, the latter to be used each year for the purchase of a trophy for the winning team in each of the districts and for the winning teams in the final debate at Columbia.

SECTION 2. In the district and inter-district contests the entertaining school shall defray the following expenses:

- (1) Local expenses of debate.
- (2) All the expenses of the judges.
- (3) Transportation, board, and lodging of the visiting debating team and an accompanying teacher or coach.

SECTION 3. The University of Missouri will meet the local expenses of the final debate including entertainment of contesting teams.

SECTION 4. The annual balance in the treasury of the League shall be applied toward the expenses of the District Directors, of the Executive Committee, and the traveling expenses of the teams participating in the final contest.

SECTION 5. Except so far as is provided in Section 4, the teams participating in the final contest shall pay their own expenses.

SECTION 6. The judges in the final contest shall determine:

- (1) The winning team.
- (2) The best individual debater. The latter will receive a scholarship in the University of the value of \$125.

#### Article X.—Debaters

SECTION 1. The debaters shall be bona fide members of their high schools, carrying satisfactorily at least three subjects, must not have been graduated from a four-year course in any high school, and must not have reached their twentieth birthday on September 1 of the year in which the debates for that school year began.

SECTION 2. The debaters shall be separated from the audience and shall receive no help during the progress of the debate.

SECTION 3. The time and order of the speakers shall be as follows:

OPENING		REBUTTAL	
Affirmative,	10 minutes	Negative,	5 minutes
Negative,	10 minutes	Affirmative,	5 minutes
Affirmative,	10 minutes	Negative,	5 minutes
Negative,	10 minutes	Affirmative,	5 minutes

#### Article XI.—Judges

SECTION 1. Representatives of the contesting schools shall mutually agree upon judges except for the final contest.

SECTION 2. All judges shall be selected from a distance not to exceed fifty miles by least railway mileage from the location of the debate, except in inter-district debates, and no judge shall be connected in any way with any debater or be a resident of either school district, or a patron of either of the schools represented. Any or all of these conditions may be waived by mutual agreement of the contesting schools. No judge shall serve in any contest between two schools who during the series of debates that year has previously served as judge in any contest in which either of these schools was a contestant.

SECTION 3. In any contest except the final, in case the schools do not mutually agree upon judges within four days after receiving notice of pairing from the District Director, the visiting team shall submit to its opponent a list of six names and the entertaining team a list of three names. On the third day thereafter these lists shall be returned to the senders arranged in the order of choice.

SECTION 4. These lists in each case must be sent in the first instance as soon as possible after the pairing, provided the schools do not agree, without this formality, upon judges, in accordance with Section 3 of this article.

SECTION 5. The entertaining school shall invite the first and second judges from the list of six and the first judge from the list of three. In case any judge cannot serve, the next judge from the list on which his name appears shall be invited.

SECTION 6. The form of invitation shall be as follows:

The high schools of..... and .....  
will hold a public contest in debate at ..... on the  
evening of ..... They join in a cordial request to  
you to act as a judge upon that occasion. The question to be debated is:

“Resolved, That.....”

Your expenses will, of course, be paid.

Respectfully yours,  
JOHN JONES,

.....high school.  
JOHN SMITH,

.....high school.

SECTION 7. Two stamped envelopes shall be sent to each of the judges, one addressed to the principal of the visiting school and the other to the principal of the entertaining school.

SECTION 8. In any contest except the final, the two contesting schools may, by mutual consent, agree upon one judge who shall determine the winner. In this event, this one judge shall take the place of the three judges mentioned in this article (Article XI) and all provisions relative to the choosing of three judges shall be dispensed with for this contest.

SECTION 9. Any school violating any section of this article shall forfeit to its opponent the right to select judges of its own choice.

SECTION 10. Instructions\*—The judges shall consider both thought and delivery. They shall decide upon the merits of the debate. Each judge shall be allowed to decide for himself as to what constitutes effective debate. Each judge shall vote affirmatively or negatively without consultation. The vote shall be delivered to the presiding officer, who shall announce the decision. (A copy of this section shall be handed or read to the judges at the opening of the debate.)

\*At the annual meeting on May 5, 1928, the Executive Committee was instructed to prepare a score card for distribution to members of the League, this card to be furnished to the judges upon mutual agreement of the two schools debating, the judges to use the card as far as they found advantageous. Score cards will be furnished all members of the League.

### Article XII.—Amendment

This constitution may be amended at any annual meeting by a majority vote.

### JUDGES

In accordance with the constitution of the League three judges or one expert judge may be used. The Executive Committee and the Secretary of the League advise the schools to agree upon one expert judge since upon this plan less expense is usually incurred and the decision is usually sustained by more expert knowledge. The Executive Committee requests that all schools show the utmost fairness in dealing with opponents. In the selection of judges each school should make sure of the qualifications of judges before a selection is made, as the Executive Committee is not disposed to support contests made on the ground that judges were unsatisfactory.

### RULES GOVERNING DEBATES

The only official rules are contained in the Constitution. However, the Secretary of the League has prepared a more complete statement of the practices usually followed in high school debating, and will supply free of charge, a copy of these suggestions to any school belonging to the League. These suggestions are not intended to be strictly official but merely show what seems to be good practice in high school debating. It is hoped that the suggestions may be helpful to schools belonging to the League. The fundamental qualities which should characterize all debate contests are fairness, courtesy, and good sportsmanship.

### INFORMATION

For further information concerning the League write to

CHARLES H. WILLIAMS,

Sec'y Mo. High School Debating League,  
University of Missouri,  
Columbia, Mo.













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